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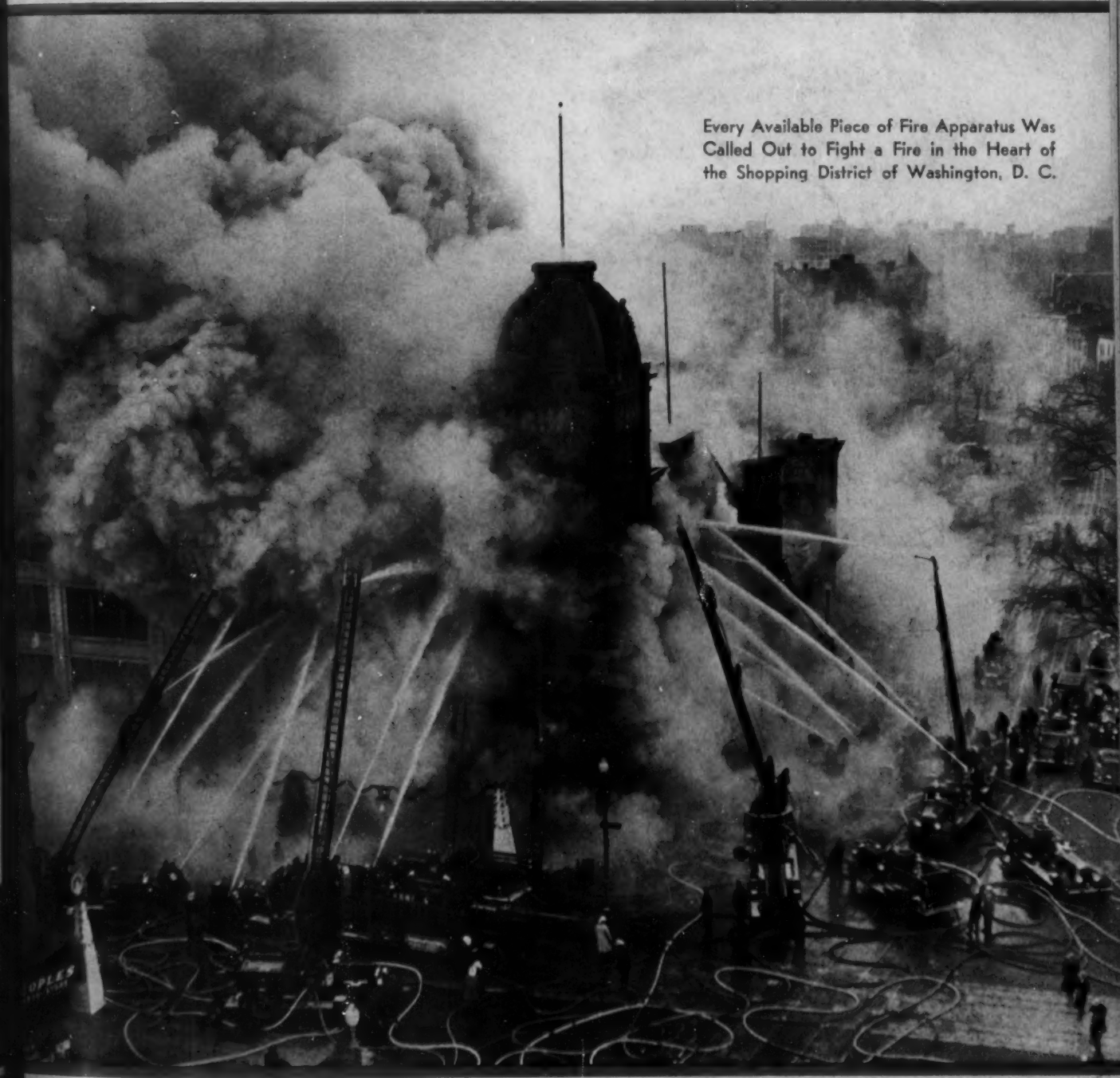
FIRE ENGINEERING

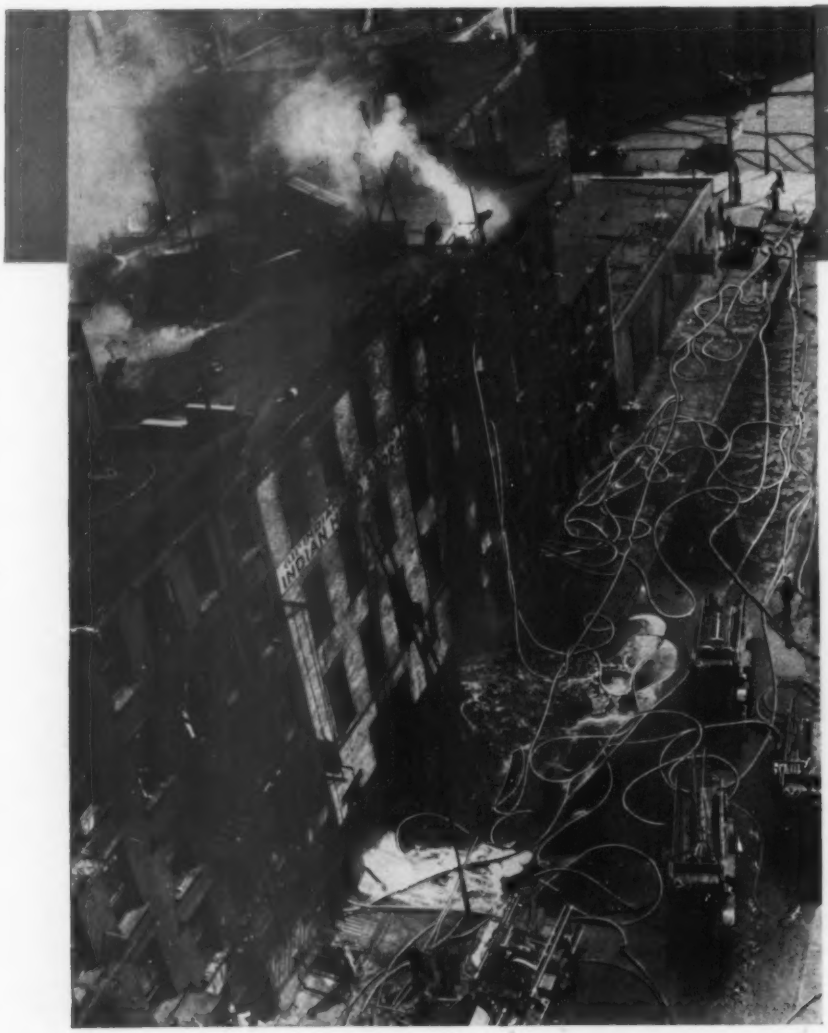
The Journal of the Fire Protection Profession Since 1877

Vol. 91, No. 2 FEBRUARY, 1938 Member A.B.C.—A.B.P.



Every Available Piece of Fire Apparatus Was Called Out to Fight a Fire in the Heart of the Shopping District of Washington, D. C.

Never a Minute Lost . . .



MANHATTAN FIRE HOSE

WHEN fire threatens life and property, time is vital. Not a minute can be lost in answering the alarm . . . in sizing up the situation . . . nor in determining the best method of fighting the fire. There must be no uncertainty—men and equipment must stick with the job under the most punishing conditions.

For 45 years, Manhattan has designed and built fire hose with all this in mind. Balanced in construction and flat folding, Manhattan Fire Hose is quickly and easily handled. It is carefully inspected at each stage of manufacture and every length is thoroughly tested under *high pressure* to guard against possible defects. Thus, in specifying Manhattan Fire Hose leading fire departments have done so with the assurance that they will get unfailing hose performance.

No matter what your needs or how limited your budget, make sure you get Manhattan Fire Hose. It is made in several grades for light service in small departments or for heavy duty in larger cities where hose is subject to high pressures.

THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.
Sole Manufacturers of Radio-Active Treated Mildew-Proof Fire Hose
EXECUTIVE OFFICES and FACTORIES, 52 TOWNSEND ST., PASSAIC, N. J.
Birmingham Chicago Cleveland New Orleans New York Boston

Famous INDIANS *of* YESTERDAY *and* TODAY

CHIEF RAIN IN THE FACE
(1835-1905)

Sioux warrior and chief, he derived his name from the fact that rain during a battle streaked and partly washed off the war paint on his face. A leading participant in the Custer massacre, it is said he personally killed the general.

CHIEF SITTING BULL
(1837-1890)

A chief and medicine man of the Dakota Sioux, this famous leader gained great influence among the unruly Indians during the Civil War. His refusal to return to the reservation in 1876 led to the campaign in which General George A. Custer and his entire command were killed.

Original Americans and great warriors all. Indian lore brings us stories of mighty deeds and mighty men but today another INDIAN is everywhere giving a splendid account of itself — THE INDIAN FIRE PUMP. Endorsed by foresters and fire chiefs, those in any way connected with Fire Protection should be familiar with these famous pumps. Write today for full information and catalog in color.

CHIEF RED JACKET
(1751-1830)

A Seneca chief, he fought for the British during the Revolution, and was a favorite among the officers, one of whom presented him with a red uniform coat. Under his leadership the Senecas allied themselves with the Americans in the War of 1812.

CHIEF TECUMSEH
(1768-1813)

This Shawnee chief, noted for his power of organization and eloquence as a speaker, was commissioned brigadier general in the British army in the War of 1812. At one time he attempted to combine all Indians from Canada to Florida in a great confederacy to resist the encroachment of the whites.

NOW INDIAN FIRE PUMPS ARE KNOWN THE WORLD OVER

THE unsolicited letter reproduced below and hundreds of others like it are stronger advertising than anything we can say about the efficiency of INDIAN FIRE PUMPS. INDIANS use only clear water—may be kept filled at all times—throw a 50 ft. stream—are low in price—economical to use—built strong to stand hard wear—put out many fires without the necessity of laying any hose. Read what Chief Smith says:

D. B. SMITH & CO., Utica, N. Y.

Wakefield Fire Dept.
Wakefield, R. I.

Gentlemen:—I use INDIAN FIRE PUMPS, 40 in two companies, 5 in one company. I have put out 500 feet of grass fire with one tank of water and 300 feet of brush fire with one tank of water. After forty years of fire fighting I feel that I can pass fair judgment and I cannot give the INDIAN FIRE PUMP too much praise for I have seen INDIANS save thousands of dollars in fire loss.

Yours very truly,
George W. Smith, Fire Chief.

CARRYING HANDLE

Pump may be carried by handle as shown above or strapped on back. Truck carrying rack makes the outfit complete. Bolts to running board or floor. Heavy strap holds pump in place without jostling or rattling. An accessory every fire department needs.

Write for catalog and prices.

MANY USES

Photo at right shows INDIANS being used to extinguish tent fire. These handy pumps can be employed to excellent advantage in fighting all manner of fires. Their strength and portability make them adaptable to grass, roof, spot, building, rubbish and many other fires.

VENTILATED TANK

Regardless of how long the INDIAN is carried, no dampness seeps through against carrier's back. The ventilated tank permits a continuous circulation of air which keeps the back dry and comfortable at all times. The Indian carries high on the shoulders — no chafing or rubbing the hips.

MADE BY D. B. SMITH & CO., UTICA, N. Y.

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HERCULES EQUIPMENT & RUBBER CO., 11 Mission St., San Francisco, Calif.
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A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

ROBERT H. LOCKWOOD
Associate Editor

FRED SHEPPERD
Editor

N. N. WOLPERT
Assistant Editor

"So Near Perfection"

THERE is an old saying that praise makes good men better and bad men worse. Well, without displaying our halo too prominently, we'll have to admit that there's something invigorating about a pat on the back especially when it comes from a friend who really seems to mean it.

● For example, writes Chief William Freeh of South Bend, Indiana:

> *"Having been a reader of* FIRE ENGINEERING *for many years, I have always found each issue to be complete, concise, interesting and indispensable to the Fire Department. Therefore, having reached this state of enthusiasm regarding your journal, I trust that you will agree when I say that I am unable to offer any suggestions that would improve a paper so near perfection."*

● Frankly, brickbats are just as welcome as bouquets. Between the two it gives us a balance that helps make the machinery run smoother.

The Publishers

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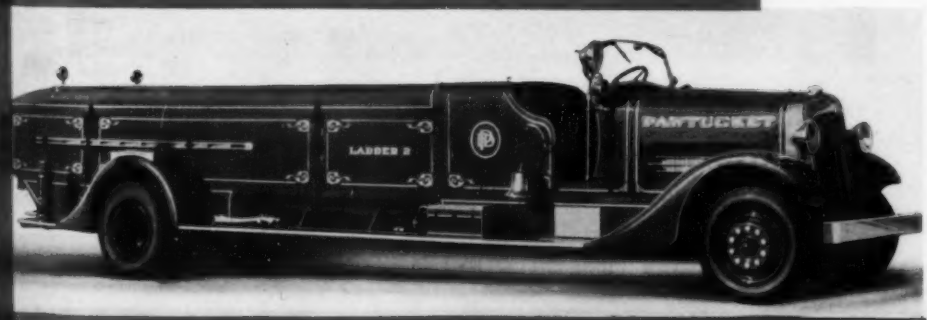
PAWTUCKET too Modernizes with STREAMLINED AHRENS-FOX EQUIPMENT!

REALIZING that *modernization* is even more important in fire fighting equipment than in other fields, city after city is carrying forward its modernization program by purchasing new Ahrens-Fox equipment.

In keeping with its handsome, new, modern municipal buildings and the up-to-the-minute equipment provided in the Fire and Police Headquarters' wings and the main building of Pawtucket City Hall, the municipal authorities have selected the Ahrens-Fox closed body type Piston Pumping Engine and streamlined Service Ladder Apparatus pictured here.

- When you replace obsolete equipment, why not really modernize with Ahrens-Fox?

THE AHRENS-FOX FIRE ENGINE CO.
CINCINNATI, O.



ULTRA STREAMLINED—most modern and practical is this Ahrens-Fox Service Ladder Apparatus.

COMPLETELY CLOSED—is this steel dome Ahrens-Fox body type Piston Pumping Engine.

EVERY TYPE OF PUMP FOR EVERY TYPE OF SERVICE

"WHAT A DIFFERENCE A FEW MINUTES MAKE!"

THEY FOUGHT a brave battle—but *they were licked before they started.* By the time the blaze was discovered . . . by the time the alarm was sent in . . . the flames already had gained hopeless headway.

Belated discovery . . . delayed alarm . . . these are the underlying causes behind nine out of ten serious fires. They are hazards which can be eliminated only through a modern fire protection system which detects and reports fire *automatically* and *instantly.*

With an Aero Automatic Fire Alarm System protecting the premises, fire will not get a head-start. Aero detects fire at its inception, and automatically summons the fire department direct to the premises. Aero is easy to install, inconspicuous in appearance, adaptable to any size or type of building. No capital outlay is required for installation. Write for complete information.

AERO AUTOMATIC FIRE ALARM

A·D·T

Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.,** 155 Sixth Avenue, New York, N. Y.
Central Station Offices in all principal cities.

A NATION-WIDE PROTECTION SERVICE AGAINST FIRE, BURGLARY AND HOLDUP

ANOTHER AKRON BRASS ACHIEVEMENT

Now Ready!

Parts of Rocker Drain Lug Coupling showing the drain ports.

THE NEW ROCKER DRAIN LUG

A SIMPLE TWIST RELIEVES PRESSURE IN HOSE LINES • ACTS LIKE A SAFETY VALVE BUT IT'S A WHOLE LOT SIMPLER!

Here is the greatest improvement in hose coupling construction since the Rocker Lug . . . ***an added feature at NO added cost.*** Everything is standard with the exception of the drain lug feature on female swivel . . . you use same gaskets, spanners, etc.

With this new Rocker Drain Lug Coupling you can relieve line pressure in the hose and make it limp for carrying up ladders or getting into tight places. Its easy to see that the Rocker Drain Lug makes handling of hose easier, quicker and increases effective nozzle play.

A single twist of the hand gives instant release from pressure . . . water is by-passed out through cored holes and directed along the length of the hose. No splashing, no shower baths.

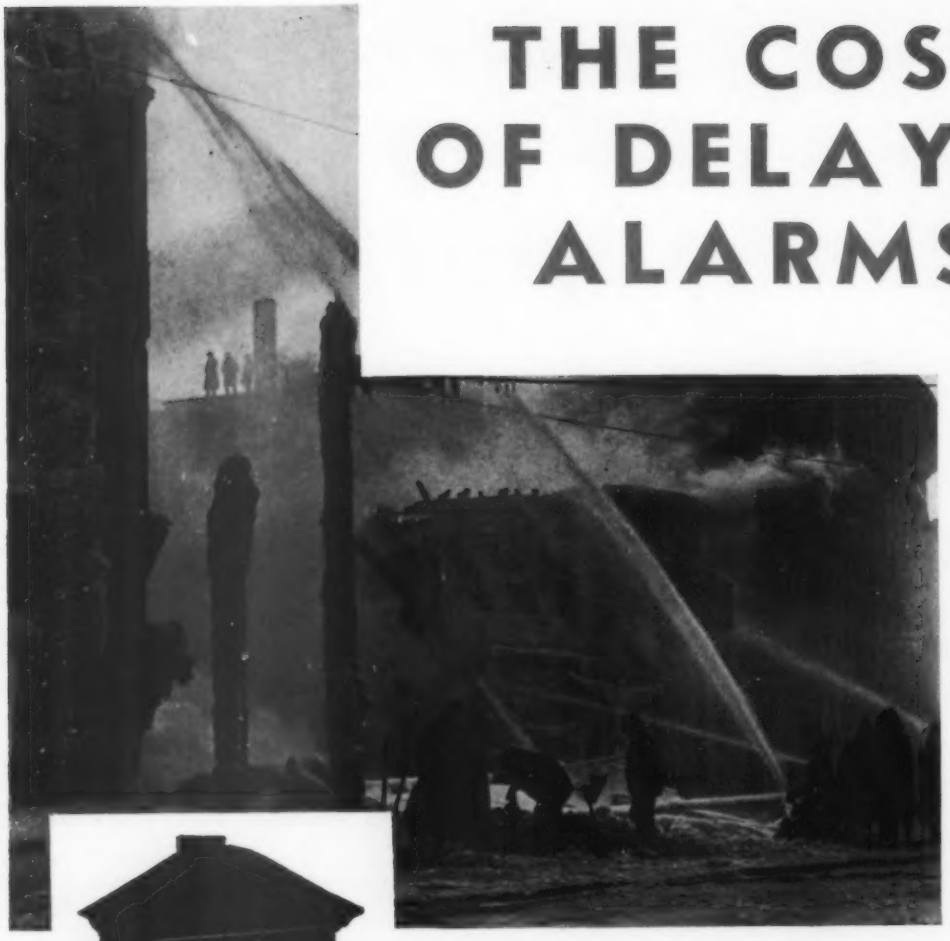
Now . . . it is no longer necessary to run back and order the engineer to shut off pressure and open the drain valve at the pumper. The new Rocker Drain Lug is a time saver and a great factor of safety.

Look into the New Rocker Drain Lug now! Leading hose manufacturers recommend the use of Rocker Drain Lug Couplings. Write for descriptive literature

AKRON BRASS MFG. CO.
WOOSTER, OHIO
Manufacturers of "America's Best Made" Fire Hose Couplings, Nozzles, Mill Supplies

Showing how the New Rocker Drain Lug Coupling relieves line pressure while hose is in service.

THE COST OF DELAYED ALARMS



ANOTHER LOCAL BUSINESS ENTERPRISE WIPED OUT . . . AN IRRETRIEVABLE LOSS TO THE COMMUNITY!

THE battered, blackened ruins pictured here represent a loss of staggering importance to the city in which the fire occurred . . . loss of employment, taxes, money through the spending of pay rolls and, probably, a measure of population, for 43% of the establishments destroyed by fire do not rebuild.

No city can have too many well-placed fire alarm boxes. Today captains of industry are urging fire department officials to provide more adequate protection against loss through delayed fire alarms. The concentration of value incidental to business enterprise needs the protection of Gamewell fire alarm boxes at all points of fire hazard.

Confer with Gamewell engineers whose rich experience is at your command.

Surveys, Plans and Estimates gladly furnished without cost or obligation.

The Three-Fold Fire Alarm Box

"A Box a Block" in congested high value districts; not more than 500 feet to the nearest box in closely built residential districts; convenient to every group of buildings, manufacturing establishments, and institutions in sparsely built districts is generally a safe rule to follow.

"There is practically no city where there are enough fire alarm boxes!"—United States Chamber of Commerce.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS MASSACHUSETTS

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FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 91 FEBRUARY, 1938 No. 2

With the Editor

A Step Forward The Directors of the International Association of Fire Chiefs, when in session at their annual meeting in New York City last month, took the initial step in the formation of specialized sections in the Association by authorizing the President to appoint a committee to lay out plans for organizing these groups. Specifically, Fire Department master mechanics, commissioners, fire alarm telegraph men, drillmaster and arson investigators would be grouped in as many affiliated associations.

Such a set-up will strengthen the International Association of Fire Chiefs in a marked degree. Having these affiliated associations of specialists working in conjunction with the International will make available to the latter the experience of these capable authorities in their respective fields.

The plan possesses real possibilities, first in organizing the different groups and thus increasing the value to the service and secondly, in unifying the efforts of all specialists in the fire service and thus producing the best of results.

It is a worthy and progressive step!

Beware of Municipal Groups! During the past few years various associations of municipal officials have sprung up under the title of "municipal leagues" or "municipal associations." Invariably they have courted state fire service organizations and have in some instances swallowed up these organizations.

This is a development fraught with disastrous possibilities for the Fire Service.

Once a Fire Department association has tied up with a municipal league, or association, that league or association usurps the authority to speak for the fire service. And if the league decides to sponsor legislation, such as pensions consolidation, which may be inimical to the Fire Service, it is in a position to claim that the Fire Service, being a part of the league, favors that particular legislation.

In some ways municipal leagues and associations may be of value to the Fire Service, and may deserve the cooperation thereof, but the possibilities of harm are too great for the Service to hock its heritage. Better be just friends; forget the wedding!

Fred Sheppard

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A Second Line of Defense

Old Fire Apparatus in Baltimore, Md., Is Maintained in Good Condition and Is Manned by the Off-Platoon for Emergency Calls

By OTIS SMITH

RESERVE apparatus is an invaluable aid to the regular forces in an emergency. It supplies replacement units when regular apparatus is being overhauled, and when a major fire calls out most of the companies, the reserve is quickly manned to fill vacant stations.

The Fire Department of Baltimore, Md., maintains such a reserve and obtains very excellent results. This second line of defense consists of twenty-four pieces of apparatus. By calling the off-shift these become twenty-four regular companies within forty-five minutes. All is apparatus formerly in active service. It is kept in good repair in order that it may render occasional service. This second line is being much used at present, while regular engines are in the shop having pneumatic tires installed.

Call for Second Line Reserve

The second line reserve is called into service by the Deputy Chief left in service. If there is a fifth alarm sounded, he gives the mobilization order at once. Or if there is a four-alarm fire in progress, and a one alarm fire breaks out, he will order the second line into service. In other words when there is apparatus out to the equivalent of five alarms, a part of the second line apparatus is placed in service. This is not done, however, when the companies out will not be out of service for long, such as several field fires. The alarm office notifies all off-duty men who are needed to man the reserve. Experience has shown that 90 per cent of the off shift can be assembled within forty-five minutes. This is accomplished by means of telephone, radio, and the police.

Men Go to Proper Station

The men proceed to the proper station and make the second line apparatus ready for service. Spare equipment of a regular company is used wherever necessary. They then take the second line apparatus to whatever station the alarm office orders. Special signals are used to indicate that a second line reserve is reporting in service. They remain in service until most of the regular companies have returned to quarters.

Seventeen of the twenty-four reserves are listed as engines. Eight of the engines are pumpers and nine are hose wagons. The pumpers range in capacity from 500 to 900 g.p.m. Three of the hose wagons carry turret pipe. All the engines have some equipment.

The six second-line trucks carry complete ladder equipment. Two trucks are aerials and the other four are the city service type. Since these second-line trucks are old, they are not used as replacements for heavy duty truck companies. When a heavy duty truck goes bad, the company borrows a truck from a light duty company and the light duty company gets a second-line truck. Second-line trucks are used anywhere, however, when a large fire has called out most of the regular trucks.

One chemical truck is held in reserve. It has truck body, fitted to carry two tons of foam powder. This truck is manned whenever the four regular chemical companies are out for an extended period.

There are numerous examples of how this second line functions in an emergency. On two occasions, Baltimore has sent ten engine companies to the District of Columbia during large fires. These engines went without notice, just as though they were rolling to a box in Baltimore city. The alarm office immediately got busy and summoned ten companies of off-shift men from their homes. Within forty-five minutes, these off-duty men had ten second-line engines in service at the ten vacated stations.

Calls for Multi-Alarm Fires

The two charts show how the second line operates for local fires. On July 24, 1937, a six-alarm fire razed the Home Laundry plant on Clinton Street. Nineteen engines rolled and nine engines changed location to cover in. Four second-line engines were manned and placed in service at their home stations. This avoided moving more engines for this purpose. No

FIRE BOXES 8723 AND 8952
SEPTEMBER 30, 1937
AT FIRE

BOX	TIME	ENGINES			TRUCK	HOSE	CHEM.	WATER TOWER	FIRE BOAT	B.C.	D.C.
FIRE BOX 8723	3.09 A.M.	52	29	46	22					7	
3RD ALARM "	3.15	25	20	1	12						1
		13	40	21		3				4	
4TH " "	3.20	36	8	18	18					3*	
5TH " "	3.27	14	4	7							
6TH " "	3.34	6*	38	44							
4TH " 8952	3.50	10*	30	53	8*					5*	
		28	23		25*						2
		55	27	15						8*	
		19	45	2	10					10	

REFERENCE

ENGINE Nº 3, 5, 9, 11, 12, 17, 22, 24, 26, 31, 32, 33, 34, 35, 37, 41, 42, 43, 47, 50, 51, 54, 56, 57, 58.
TRUCK Nº 1, 2, 3, 4, 5, 6, 7, 9, 11, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 26
H.P. HOSE Nº 1, 2, 4, 5
CHEMICAL Nº 1, 2, 3, 4
BAT. CHIEF Nº 1, 2, 6, 9

TRANSFERS

ENGINE Nº 6-13, 10-25, 8-36, 31-52, 33-29, 41-14, 51-21, 12-7, 34-40, 58-38, SL.6-18, SL.15-13, SL.4-30, SL.10-2
TRUCK Nº 8-18, 25-22, 14-18, SL.18-22
BAT. CHIEF Nº 3-4, 5-4, 8-3, 2-4

SECOND LINE COMPANIES RESERVE

ENGINE Nº *4, *6, 7, *8, *10, *15, 17, 23, *25, 26, 27, *29, 33, 38, 40, 54.
TRUCKS Nº 5, 6, *8, 10, 17, *18
CHEMICAL Nº 1

* Placed in service.

Response for a Ten-Alarm Fire

second-line trucks were placed in service, as the three trucks which transferred were considered sufficient.

The other chart shows the ten-alarm fire at Carlin's Park on September 30, 1937. Twenty-nine engines rolled and eight engines changed location. Seven second-line engines were manned and placed in service. Two of these remained at their home stations and five filled in elsewhere as indicated by the chart. Six trucks rolled to the fire and one truck was moved from a quiet area to fill in. Two second-line trucks were placed in service to avoid moving any other regular trucks.

Full Stations Possible

Using these second line engines and trucks allowed the alarm office to maintain full stations in other parts of the city. During the Carlin's fire there were twenty-six stations from which no apparatus was taken. These stations contained thirty-two companies which remained in service during the fire. Thus, there was no possibility of response to other fires being delayed because of companies being out on the streets making transfer which are not included in the second line classification. This includes eight movements. A ten alarm fire in an industrial district would call out about sixty companies. In this case the entire second line could be placed in service to fill in at most of the vacant stations.

There are other necessary reserves roadsters, which are kept for replacement use for the chief officers. These roadsters were placed in service a few years ago when new cars were purchased. Instead of being disposed of they are held as reserves. One reserve ambulance is kept for use, when one of the seven regular ambulances breaks down. These public ambulances make over 17,000 runs a year and a reserve unit is a necessity.

Other Reserve Apparatus

Still other reserves include a fuel truck and a flood light truck. The fuel truck has tanks for gasoline and lubricating oil. No. 1 Flood Light in reserve fills in at boxes downtown, when the regular truck is out. It also has been used to light up fields for night games.

System of Great Value

The Miscellaneous Reserve includes nine tractorized steamers and four motor hose wagons. The steamers are retained more as relics than anything else, since they have never been used since their retirement, a good many years ago. Some of the miscellaneous reserve could be used, however, if absolutely necessary.

Called Into Use Many Times

It is readily apparent that Baltimore's example of a second-line reserve is an asset not to be overlooked. It has been built up from retired apparatus and no appropriations were necessary. It is called into emergency use many times during the year and supplies replacements to regular companies. Whenever new apparatus is purchased, the old is added to the reserve. Over a period of years a powerful reserve has been built up, which gives the city a second fire department to call upon in an emergency.

FIRE BOX 2334
JULY 24, 1937
AT FIRE

BOX	TIME	ENGINE				TRUCK	HOSE	CHEM	WATER TOWER	FIRE BOAT	B.C.	D.C.
FIRE BOX 2334	2.56 P.M.	41	51	22		20					1	
2ND ALARM 2334	3.00	11	24	5	1	17			2			2
3RD ALARM 2334	3.02	50	34	9		3					2	
4TH ALARM 2334	3.08	3	6	32		24					8	
5TH ALARM 2334	3.11	19	4	26								
6TH ALARM 2334	3.14	33	23	15								

REFERENCE

ENGINE Nº 2,7,8,10,12,13,14,17,18,20,21,25,26,27,29,30,31,35,36,37,38, 40,42,43,44,45,46,47,52,53,54,55,56,57,58
TRUCK Nº 1,2,4,5,6,7,8,9,10,11,12,13,14,15,16,18,19,21,22,23,25,26
H.P.HOSE Nº 1,2,3,4,5
CHEMICAL Nº 1,2,3,4
BAT CHIEF Nº 3,4,5,6,7,9,10

TRANSFERS

ENGINE Nº 7-11, 8-3, 10-5, 21-51, 20-9, 29-19, 55-50, 30-41, 17-22
TRUCK Nº 4-3, 7-20, 25-24
BAT CHIEF Nº 3-1, 5-2, 10-5

SECOND LINE COMPANIES-RESERVE

ENGINE Nº *4, *6, 7, 8, 10, *15, *17, *23, 25, 26, 27, 29, 33, 37, 38, 40, 54
TRUCK Nº 5, 6, 8, 10

*Placed in service

Response for Six-Alarm Fire Which Razed a Laundry

West New York Honors Chief Beckert

Ernest Beckert, Chief of Fire Department, West New York, N. J., head of the department since 1915 and a member of the service since 1906, was presented with a diamond studded badge on January 17, as a mark of his 25-years' service. The presentation was made by the Mayor, in the presence of the men of both platoons who were drawn up in formation. Many important city officials from various parts of the state were present.

Chief Ernest Beckert

In the evening, Chief Beckert attended the Exempt Firemen's Ball, where he was presented with a wrist watch and many other gifts by his friends.

On March 6, 1906, Chief Beckert organized the Hudson Hose Company. He held all offices in that company. On May 1, 1910, he was elected Second Assistant Chief, First Assistant Chief, on May 1, 1912, and Chief of the Volunteers on May 1, 1914. On November 15, 1913, he was appointed a member of the part-paid department, with the rank of Captain. Two years later the full paid department was organized, and Beckert was made Chief.

Chief Beckert has attended all conventions of the I.A.F.C., for the past twenty-one years. He is said to be one of the first Chiefs to recommend the installation of all fire alarm wires underground.

At the exercises of the 20-year group, a number of new members were initiated and each of the initiates received a badge with "20" on it.

Some Notable "Firsts" in the Fire Service

A Chronicle of the Important Developments in Equipment and Personnel of Fire Departments Over a Period of Twenty Centuries, Concluded from Last Issue

TWO platoons of firemen for full paid Fire Departments originated with Chief James W. Dickinson, of Cleveland, who read a paper favoring that system at a convention of the International Association of Fire Engineers at Minneapolis, August 14, 1888. Cleveland was not the first to adopt that system, but it was the first to grant its firemen one day off duty in every four.

New York was the first to give the two platoon system a trial in one Battalion, from December 5, 1904, to March 5, 1905. It was discontinued on petition of 85 per cent of the firemen of that battalion. The whole department was then given one day off in five. The two platoon system was tried in two Chicago Companies, Engine 40 and Truck 5, both in the same station, for 50 days commencing Oct. 22, 1905. It was given another trial in a whole battalion from August 2, 1906, to April 15, 1907.

An Early Steam Fire Engine

Omaha, Neb., First to Adopt Two Platoons

Omaha, Neb., was the first to adopt the two platoon system, nineteen years after Chief Dickinson recommended it at the Minneapolis Convention. Kansas City was the second to adopt it, July 21, 1912, followed by Butte, Mont., February 4, 1913; Seattle, Wash., April 1, Great Falls, Mont., May 1, and Yonkers, N. Y., July 15, 1913.

First Sectional Firemen's Association

The first state or other sectional firemen's association was organized at Springfield, Mass., September 27, 1855, and was called the New England Firemen's Association. It existed for a short time. The next, and the first of the present associations, was the New York State Volunteer Firemen's Association, organized at Auburn, N. Y., October 1, 1872. The next was the Minnesota State Association, February 14, 1873.

I. A. F. E. Organized

The International Association of Fire Chiefs was organized at Baltimore, October 20, 1873. It was then named National Association of Fire Engineers. It was organized principally through the efforts of Chief John S. Damrell, of Boston, its first president, and was one of the results of the conflagrations at Chicago in 1871 and Boston in 1872.

The next association to be organized was the Northwestern Ohio Firemens' Association in 1874, Michigan and Texas in 1875, and New Jersey and Pennsylvania in 1879.

Veteran Firemen Organize Association

The first veteran firemen's association was organized at Boston, December 30, 1833. Its purpose was to man hand engines temporarilly without compaines. It existed for many years. The next was the New York Association of Exempt Firemen, organized October 13, 1842, followed by the Philadelphia Volunteer Firemen's Association, December 14, 1875, the Boston Association, April 9, 1879, Providence, R. I., January 11, 1881, and a great many throughout the country since then.

Commencement of Hand Engine Musters

Musters of hand fire engines commenced at Bath, Maine, July 4, 1859. The largest number ever held in a single season was 32 in 1901; the largest muster was in Lowell, Mass., August 20, 1908, with 63 engines. Up to 1932, 1,092 had been held with 4,609 prizes, a total of $5,405. There were 61 musters of steam fire engines, the first being held at Toledo, Ohio, July 4, 1863; the last, at Spencer, Mass., Aug. 24, 1891. The best play ever made at a muster by a steam fire engine is 273 feet, 11½ inches by Falmouth No. 4, an Amoskeag engine of Portland, Me., in 1900. The best muster play by a hand engine, 276 feet, 11 inches, at Battle Creek, Mich., in 1860.

Early Types of Uniforms

The uniforms of volunteer and hand engine firemen were practically all red flannel shirts, with white belts for officers and black for privates; dark pants and a glazed leather cap.

The blue uniform of the present time came with full paid firemen in 1865.

Commanding officers of old time fire companies used short brass trumpets to give orders. Each piece of apparatus carried two of them. Presentation and parade trumpets of elaborate design, large and costly, came in hand engine times and are now often carried in parades of active and veteran firemen.

There have been many newspapers devoted wholly or in part to firemen. The first was the "Firemen's Intelligencer," in New York in 1826. The next was the Firemen's Advocate, at Boston, in 1850. During the hand engine and volunteer firemen period there were several published in New York, Philadelphia, Detroit and San Francisco. After the civil war, for some years, the principal newspaper for firemen was the "New York Mercury," a weekly publication devoted to theatrical and sporting news. The first of several firemen's publications in recent years was the Firemen's Journal of New York City, established in the year 1877, now FIRE ENGINEERING.

There are many collections of fire service relics. Nearly all of the many veteran firemen's associations have one or more. There are many private collections. There is but one large collection of old fire apparatus, that of Henry Ford, at Dearborn, Mich.

DIRECTORS AND OFFICERS OF I. A. F. C. HOLD ANNUAL MEETING IN NEW YORK

Vote to Provide for Sustaining Memberships, Formation of Special Sectional Groups, and Changes in By-Laws—Dates for 1938 Convention, October 25-28

TWENTY-FIVE members, including officers, directors, and committeemen, attended the annual directors' meeting of the International Association of Fire Chiefs that was held at the Hotel Pennsylvania, New York, January 17 to 19. President Daniel B. Tierney, Chief at Arlington, Mass., presided.

As Chairman of the Educational Committee, Chief Ralph J. Scott, Los Angeles, outlined suggestions for the special educational service contemplated. Both the I. A. F. C., and the International Association of Fire Fighters, represented by George J. Richardson, its Secretary-Treasurer, were in favor of the proposed educational service.

Chief Tierney advised the group that the government has set aside $14,500,000 for state vocational work, and $350,000 is available for administration work at Washington in vocational education.

A report was read of a conference held with Vincent Stanley, President, and Mr. Porosky, of the Gamewell Company. Mr. Stanley proposed Sustaining Membership in the association at $250 a year and he felt that he could induce twenty-five manufacturing firms selling equipment and appliances to the fire field, to joint at such a rate. He believed that a fund of $250,000 should be raised, if the I.A.F.C. is to rightfully assume its place in the field.

A lengthy discussion followed the presentation of this report, and when the belief was dispelled that the manufacturers had a selfish motive in this respect, a resolution was passed recommending a change in the constitution to make possible the new class of membership.

The resolution reads:

"The Board of Directors of the International Association of Fire Chiefs, in session at the annual meeting held at the Hotel Pennsylvania, New York City, January 17 to 19, recommend that Article 5 of the Constitution be amended to provide for an additional classification of members to be known as Sustaining Members. Such membership to be covered by the addition of Section G, Article 5. of the Constitution."

Details of the new classification and a copy of the resolution will be submitted to the membership at least thirty days prior to the convention at New Orleans.

The question of an ordinance to prohibit fireworks was introduced. A resolution was passed approving state laws prohibiting the selling and shooting of fireworks, except under the auspices of competent public supervision.

By a unanimous vote, Dr. David Price, U. S. Department of Agriculture, was recommended for Honorary Life Membership.

Chief Mottesheard introduced the problem of the control of colors for the painting of commercial trucks. A motion was passed that letters be sent to all Governors, heads of motor vehicle bureaus, automobile manufacturers and large industrial firms, calling attention to the hazard that was imposed upon the people when commercial trucks were painted red, thereby making fire apparatus less conspicuous.

Chief Scott suggested that the association form divisions—that there should be groups, for example, of master mechanics, fire alarm superintendents, drill masters, fire commissioners, members of fire prevention bureaus, fire marshals, etc. Members agreed that the idea was excellent, and that some action should be taken at once.

Acting on a motion by Chief Steinkellner, it was moved that the Directors approve the formation of these special sections.

Commissioner J. J. McElligott, of New York City, invited the association to hold its 1939 convention in New York City. He also announced that the Committee on War Emergencies would get together soon and make its report.

A motion was approved that Section 9 and 10 of the by-laws be eliminated. These sections refer to standing committees of the association.

During the meeting, there was some discussion regarding the convention program for New Orleans. A suggestion was made that half a day be set aside for the discussion of the proposed changes in the constitution and by-laws, and another half a day for the discussion of the educational program.

October 25, 26, 27 and 28 were selected as the dates for the annual convention at New Orleans.

Those who attended the meeting included:

Chief Daniel B. Tierney, Arlington, Mass., President; Chief Roy E. Mottesheard, Dearborn, Mich., First Vice-President; Chief Ray Tiller, Waterloo, Iowa, Second Vice-President; Ex-Chief James J. Mulcahey, Yonkers, N. Y., Recording Secretary and Treasurer; Fire Marshal Jay W. Stevens, Executive Secretary; Chief Ralph J. Scott, Los Angeles, Cal., Committeeman; Chief D. W. Brosnan, Albany, Ga., Committeeman; Ex-Chief John J. Towey, Newark, N. J., Committeeman; Chief Thomas F. Burns, Bridgeport, Conn., Committeeman; Chief Selden R. Allen, Brookline, Mass., Committeeman; Chief Robert Bogan, Baton Rouge, La., Committeeman; Chief J. Keegan, Newark, N. J., Committeeman; Chief Arthur W. Olsen, Omaha, Neb., Committeeman; Chief George Goff, Oklahoma City, Okla., Committeeman; Chief C. E. Clark, Wayne, Pa., Director; Chief Peter Steinkellner, Wilwaukee, Wis., Director; Chief James T. O'Donnell, St. Louis, Mo., Director; Chief O. J. Parker, Atlanta, Ga., Director; Chief J. Ray Roe, Abilene, Tex., Director; Chief Lloyd B. Canfield, Beverly Hills, Cal., Director; George Morley, New York City, Sergeant-at-Arms; Fred Shepperd, New York City, Headquarters Manager; I. H. Case, New York City, Chairman of Publicity; Chief Ross B. Davis, President, Eastern Association of Fire Chiefs and Director of the I.A.F.C., and Commissioner John J. McElligott, New York City, Chairman of the Membership and Attendance Committee and Chairman of the Committee on War Emergencies.

New England Chiefs to Meet in June

Secretary John W. O'Hearn, New England Association of Fire Chiefs, has announced that the 16th annual convention of the association will be held in Burlington, Vt., on June 21 to 23. Headquarters will be at the Hotel Vermont and exhibits will be arranged in the Municipal Auditorium.

Chief Ned Stevens Dead

Chief Ned Stevens, of Leesburg, Fla., died of a heart attack while fighting a fire in a grocery store. His widow and four children survive.

This is the second death in the official family recently. The police chief died of a heart attack while making an arrest.

PROMOTIONAL STUDY COURSE

Herein is presented a series of definitions, questions and answers designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.

Definitions

Dead Riser: In sprinkler equipments, a dead riser is the riser which drops down from the tank supply to the basement without any branch lines.

Dead Storage: Automobiles are said to be on dead storage when they are not in use, and laid up for the season.

Deck-Floor: The main floor of a pier. A narrow mezzanine floor or gallery between floors.

Diaphragm: A single or double-movable plate or partition placed across or inside of a tube, pipe or other hollow body to record fluctuations in pressure or heat, to hold back liquids or gases or to allow variations in pressure without impairing the efficiency of the device.

Questions

(To be answered in next issue)

1. Explain fully how you would proceed to extinguish an oil fire in a storage tank of crude oil and protect adjacent tanks, and what dangers are to be avoided.
2. You are sitting in the front row of a theatre and during intermission you notice smoke coming through the door underneath the stage. What would you do?
3. At what kind of fires are "smoke" explosions likely to occur?

False and True Questions

(Is each question false or true? Answers in next issue)

4. T F—Panic is the greatest danger in connection with the use of fire escapes, when large numbers of people are involved.
5. T F—Outside Fire Department connections to standpipes are of value in handling fires in upper stories.
6. T F—The nearer it is to a burning building, the more effective a deck pipe will be.
7. T F—The actions of one company about quarters or at a fire often influence the judgment of the public in connection with matters of interest to the whole department.
8. T F—Valuable stores of merchandise can often be protected from serious fire loss by means of automatic sprinklers and automatic alarms.
9. T F—Harmony and team-work are two of the essentials necessary for efficiency in the Fire Department.
10. T F—There is a dust explosion hazard in an iron foundry.
11. T F—After response to alarm at night, cleaning of apparatus should always be left for the day shift.
12. T F—Ventilation at low points adds to the probability of so-called hot air explosions.
13. T F—Hose is sometimes damaged by the carelessness of members in filling portable extinguishers.
14. T F—Dry pipe sprinkler systems are not as efficient as wet systems, when conditions are equal.
15. T F—Unlined linen hose, if kept dry, will last almost indefinitely.
16. T F—Members of a company working at a fire are justified in ignoring orders from another officer of the department, unless such officer is in charge of the fire.
17. T F—Standpipes are especially efficient where fire is above the reach of ladders or water towers.
18. T F—In general, the hose used in the department is of good quality and is four-ply, cotton fabric.
19. T F—In wet pipe sprinkler systems the pipes are constantly kept charged with water under pressure.

Completion Statements

20. The device on an automatic fire door which melts when exposed to heat is called a .....
21. The two types of frame dwelling construction are ..... and .....
22. The concealed space beneath the roof of a flat-top building is commonly called the .....
23. The most dangerous domestic heating system, commonly found in buildings, from the standpoint of fire safety is the .....

Answers to Questions in Previous Lesson

1. Heavy streams are required at fires where there is a great volume of fire and heat. A fire is cooled by the water thrown on it, or in other words, the greater the volume of heat, the more the water that will be required. Heavy streams are also necessary where great range is demanded, such as operating on fires in a building from the street, or across streets from opposite buildings. In covering exposures heavy streams are widely used, due to the fact that they have greater range and can accomplish the purpose much better than lighter streams. A large diameter stream will have a greater range for the same nozzle pressure than a small diameter stream, which is an important factor where streams are being operated in the open and where there is a breeze blowing.

Incidentally, where heavy streams are employed, they are usually placed where they need not be shifted frequently. The nature of the heavy stream is such that it is not practical to continually move it such as in the case of small streams.

The type of fire, too, determines the size of stream required. For instance, a lumber yard would require heavy streams; also a church building where the entire interior is fully ablaze and where operations must be carried on from a distance.

The apparatus which employs heavy streams includes water towers, with tower nozzle and deck gun; wagon with deck pipe, high pressure hose wagon with deck pipe.

Some appliances which are used in operating heavy streams include the Eureka pipe holder, Paradox holder, Simplex holder and Perfection pipe holder. The Perfection pipe holder is a development of the stick used on play pipes. In addition to the foregoing apparatus mentioned as employing heavy streams, there may be also mentioned fire boats which employ both Monitor nozzles and rail pipes.

2. Two public service organizations which cooperate with the Fire Department at fires are the Gas Company and the Electric Company.

The Gas Company shuts off the gas supply in the fire building and in emergencies may assist in the rescue and resuscitation of persons overcome in gas-filled locations.

The Electric Company cuts off current supply on overhead wiring where such current may endanger men operating at the fire; it also cuts off service of fire building where such is advisable.

3. An unpierced fire wall is one having no openings, such as doorways, etc., therein. Such walls are usually 12 inches thick, and are frequently of brick.

Floor: The structure formed of beams, girders, etc., with proper covering which divides a building horizontally into stories.

Ceiling: The overhead, inside finish of a room.

4. True; 5. True; 6. False; 7. True; 8. True; 9. False; 10. True; 11. False; 12. False; 13. True; 14. True; 15. False; 16. True; 17. True; 18. True; 19. True; 20. True; 21. True; 22. False; 23. True.

24. . . . sprinkler head.
25. . . . calcium carbide.
26. . . . mushrooming.
27. . . . greater. . . .

Band Presents Gift to McLaughlin

Edward F. McLaughlin, who recently retired from the position of Fire Commissioner of Boston, Mass., was presented with a handsome onyx desk set by members of the Boston Fire Department Band, which was organized during his administration. A testimonial dinner to Mr. McLaughlin will be held at the Hotel Bradford, Boston. Daniel J. Looney, Secretary of the Massachusetts State Firemen's Association, is Chairman of the Committee of Arrangements.

HARRY BELKNAP

New Hampshire Firemen Organize

At a meeting held in Concord, N. H., on January 18, the New Hampshire State Permanent Firemen's Association was organized, with James McCusker, of Claremont, elected President.

Other officers chosen were, Eugene B. Riley, Keene, First Vice-President; Robert Girouard, Nashua, Second Vice-President; George Cogan, Portsmouth, Third Vice-President; Tom L. Kellogg, Manchester, Secretary-Treasurer; and C. G. Howser, Concord, Sergeant-at-arms. Another meeting to complete details of organization will be held on May 10.

HARRY BELKNAP.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

COMPLETELY ENCLOSED BUILDING FRONTS

THE builder today has materials that were unheard of a decade ago. One substance that is opening up new methods of construction is the glass block which is said to have a low heat loss and a high transmissibility of light.

Ever striving for new effects in building designs, the architect has developed a front which is more or less solid above the street floor. While such a front elevation is very striking and has artistic merit, it possesses many fire hazards that did not exist with the older designs. In the event of explosive gases, the solid front provides no means for the gases to escape.

Should a fire take place, the Fire Department would have a trying time gaining entrance from the front.

Some departments are very much worried over the situation, while others are lucky enough to secure some help from their building codes.

The problem in full is discussed in this issue. Due to the number of replies received, the discussion will be concluded in the next issue.

Discussion of the Question

Earl A. Traeger, Chief, Minneapolis, Minn.: Before erecting a decorative front on a building or remodeling a building, it is necessary, according to our building code, to obtain a permit from the Inspector of Buildings, and unless the building code was followed as to windows, doors, exits, etc., the permit would not be granted. Our building code is rather vague on this particular point; however, if this decorative front was to cover an old, dilapidated building, it would not be permitted, because the Inspector of Buildings would operate under Section 109 of the building code which is as follows:

"Section 109. It shall be the duty of the Inspector of Buildings to examine, or caused to be examined all buildings reported dangerous or damaged by fire or accident, and whenever any wall or other part of a burned building is found to be unsafe, or when any building or any part thereof shall be unsafe for the purpose for which it is intended or used, or whenever any machinery, material or staging used in or about the construction of any building is unsafe for the purpose for which it is intended or used the Inspector of Buildings shall notify the owner, agent or occupant, or person in charge or control of said building, in writing, specifying wherein such danger consists, and ordering such dangerous building or any part thereof, or any such machinery, material or staging, removed, taken down, repaired or altered, as the Inspector of Buildings shall require. And thereupon the owner, agent or occupant, or person in charge or control, so as aforesaid notified by the Inspector of Buildings, shall forthwith put such wall, building, material or staging in a safe condition, or take down and remove the same." Or Section 111 which is as follows:

"Section 111. Any frame building in the city of Minneapolis which has, in the opinion of the Inspector of Buildings, been damaged from any cause to the extent of 40 per cent of the value of a similar new building and which is in dangerous condition or which as a fire hazard constitutes a menace to other property shall be torn down and removed when so ordered by the Inspector of Buildings.

Section 102:2 which follows would be used or cause the removal of any installation or construction which would endanger life or property:

"Section 108:2. The Inspector of Buildings and his regularly authorized assistants are hereby given authority to enter any building in the city of Minneapolis in the performance of their duties, and to order and to compel the suspension of any work being done in violation of the provisions of this ordinance, or without a notice of permit having been posted as required, and to prohibit the use of any material or the maintenance or operation of any machinery in violation of the provisions of this ordinance, or in violation of the provisions of any other law or ordinance the enforcement of which comes within his or their duties, and to order and to compel the removal from such building of any materials, or of any construction or installation, or any portions thereof, which do not conform to the requirements of either of such ordinances or laws or which would or do endanger life or property or create or give rise to unsanitary conditions in connection with such premises, and the owner, agent, occupant or person in charge or control of such building, or the contract or constructing or altering such building or installing any material, device or equipment therein or thereon, shall, when so ordered by the Inspector of Buildings as above provided, remove therefrom such illegal or unsafe materials, construction or installation forthwith."

Several of our buildings have changed their fronts in the last year or so, but in no case have any of them attempted or been allowed to erect a front that would entirely close up the building above the first floor.

Oscar A. Grab, Chief, New Rochelle, N. Y.: The Building Department will not allow any remodeling of any business structure, whereby the upper floors are entirely closed off—these rulings apply whether the upper floors are occupied or not. The Fire Department is always consulted in these matters.

The plans for the remodeling or new construction in the business district, commercial or factory, must first be submitted to the State Department at Albany. They approve or disapprove. They are very particular as to proper

HERE IS THE PROBLEM

The problem discussed in this issue, is based upon the following letter which was received from a reader:

"The Fire Department of this city is confronted with a new problem, where quite a number of the older business buildings along Main Street have been remodeled with decorative fronts, in such a manner as to entirely close up the building above the first floor.

"In one instance a new building has been erected, sandwiched in between the adjoining buildings, with solid walls front and rear, excepting the show window and entrance on the ground floor. None of these buildings are sprinklered, and of course you can realize what a hazard they must constitute.

"There is no local ordinance governing this situation, and before attempting to secure one, I would like to get some information on the subject.

"How do other Fire Chiefs control this problem?

"Do their building codes cover such alterations, or have they power to prevent structural changes which may increase the fire hazard of a building, or which may make fire-fighting operations more difficult and dangerous?

"If they have an ordinance, or building code, which successfully controls this problem I would appreciate having the substance thereof."

width of doors, exits and especially where basements are used for show and sales—they must be sprinklered. The state advises the one submitting plans, if plans are disapproved, the reasons thereof. The local Building Inspector and Fire Department still have the right, even after the State approves plans submitted, to make variations for the better, in accordance with our code.

The only cities or towns in the state of New York which are not required to submit plans to Albany for their approval are New York, Buffalo, and other first class cities.

We are fortunate in New Rochelle of having a Building Department that cooperates completely with the Fire Department. Any question of safety to occupants and new construction are thrashed out by both departments before a temporary permit is issued by the Building Department.

W. P. Payne, Chief, Spokane, Wash.: The modern trend toward building and lighting for the same, is to construct buildings soundproof and windowless. Artificial light takes the place of sunlight and is considered much better, leaving no shadows and giving a higher and more even light effect throughout the building.

With no openings in the exterior walls, the building is more easily sound proofed and air conditioned. This type of building is generally constructed of fireproofed materials, but in the event of a major fire it is easy to see how difficult it would be to combat the blaze, unless an adequate sprinkler and venting system is used.

Where old buildings are rebuilt along these lines, and the entire fronts above the first floor are bricked up, Fire Department officials must realize that interior fire protection and means of exit and ingress shall be made in some manner acceptable to the fire ordinances.

In this city, all new building plans and alteration plans to buildings must first be submitted to the Fire Department before construction can be started. Proper exits and vents must be made to facilitate the work of the department in the event of fire. In most instances a sprinkler system is required. Where people live or are employed in this type of construction, interior fire escape wells must be provided.

N. A. Phelan, Chief, Pittsburgh, Pa.: These conditions constitute a real hazard; one that the Board of Underwriters would be the first to realize and their Rating Division would act accordingly on the insurance rates. The occupants and owners would pay.

In the absence of a local ordinance controlling such construction and until one could be secured, I would have appealed to the owners when the buildings were under construction or alteration, apprising them of the higher insurance rates involved, which, incidentally, means an increased overhead for both owners and occupants.

Our Building Code makes it mandatory that all applications for construction or alterations must be accompanied by plans, which are subject to the approval or disapproval by the Superintendent of the Bureau of Building Inspection and the Fire Chief.

Our Building Code is too voluminous to allow publishing here, but to cover this discussion, all buildings must have windows or other openings front and rear, primarily to facilitate the operations of the Fire Department. The number and size of standpipe installations is governed by the height and area of the building. Sprinkler installations and kind are governed by height and occupancy.

R. M. Hitchings, Chief, Flint, Mich.: We have this same problem in our town and we are wondering what we are going to do about it. About a year ago I took this matter up with our Building Department, to try and find some solution for it, but under the present Building Laws and Ordinances they were unable to find a way out.

Our Legal Department advised us they knew of no laws that prohibited the erection of a building without windows. We tried to claim a fire hazard, but were unable to show that a building without windows was any more a fire hazard than a building with windows; in fact some contended that a fire was less liable to spread in a building without windows than a building with windows.

When we finally brought up the point that was uppermost in our mind, that of being able to get into the front of building in case of fire, we were told it would be hard to get any legislation to make it easier for the Fire Department to fight a fire.

Lawrence E. Reif, Chief, New Haven, Conn.: Herewith is copy of a letter received from our Building Inspector, which I think covers the matter:

"The building code of the city of New Haven is still considered a document with strict requirements, as compared with other building codes throughout the east. We do not allow buildings extended in between present buildings, as each building must have its own enclosing wall. Any opening in such walls has to be protected by fire doors or fire windows. We do not demand buildings to be sprinklered, unless the owners wish additional floor area. A sprinklered building may be increased from one-third to one-half over the ordinarily allowed area.

"Further, our building code thoroughly covers alterations to existing buildings, a particular requirement being that 'to the extent altered' all buildings must comply with the present building code.

"The Building Department, in cooperation with the Fire Department, takes every precaution so that the fire hazard of any building will not be increased, and many precautions are taken whereby accidents to firemen may be prevented; for instance, in the application of carrara glass, or in other such facings on street fronts, the Building Department requires a metal lath and plaster base, where formerly such facings were applied directly to the wood. Many other such safety measures as fire escapes, inspection of buildings, where persons are detained for observation, cars, etc., are in effect between the Fire Department and the Building Department.

"We feel that our present building code allows us to insure safety to the general public."

William Freeh, Chief, South Bend, Ind.: The matter regarding buildings with remodeled fronts which are entirely closed above the first floor has been most interesting and deals with a subject that, when thoroughly analyzed by various Fire Departments, will tend to create a beneficial aspect to those of us who are confronted with a situation that can only become detrimental to the Fire Department.

As we are directly affected by this serious condition, we have on numerous occasions discussed the possibility of securing an ordinance, or at least some limitations, that would prevent these structural changes in buildings, but unfortunatey we are unable to curb this hazard.

With this type of alteration being in its infancy, and as we are somewhat unfamiliar with it, we would suggest that legislation in the form of a local ordinance be enacted that would make it mandatory that all buildings be required to have openings on every floor, front and rear, fully sufficient to meet all needs or requirements for Fire Department activities.

Edw. T. Rose, Chief, Wheeling, W. Va.: We have two such fronts in our city, both on old buildings and constructed about the same time. I did everything I could do to stop the construction, but found that our building laws did not cover this hazard, and coupled with powerful influences I had to let it go.

I think a solid front, especially on an old construction, creates one of the worst hazards imaginable, if it is in the congested district and is hemmed in by other buildings (as the two in our city are). In the buildings in our city, they cover the windows on the only side of the building that we could get streams through. This sets up an explosion hazard, wherein a slight explosion in the building, with all the windows so blocked, would allow no way to relieve the expansion of air. The front would naturally be blown out in the street, causing a very serious life hazard.

I believe that each city should adopt an ordinance covering this construction and give the Building Inspector and Fire Chief more leeway to stop such hazards.

Edw. A. McHugh, Chief, Louisville, Ky.: Relative to how the Chief in our city controls the problem of entirely closing up the building above the first floor in remodeling such a building, our fire prevention ordinance states, in part:

"It shall be the duty of the officers of the Bureau of Fire Prevention to endorse all laws and ordinances of the state (county) and city, covering the following: The means and adequacy of exit in case of fire from factories, schools, hotels, lodging houses, asylums, hospitals, churches, halls, theatres, amphitheatres, and all other places in which numbers of persons work, live or congregate, from time to time for any purpose."

FOR THE NEXT ISSUE

Due to the length of this discussion, it will be concluded in the next issue.

This is a very effective manner to handle the situation on new work or when buildings are being remodeled through cooperation of the local building inspector.

We are planning to make an effort to include this in our local Building Code.

John Gibson, Chief, Mt. Vernon, N. Y.: We have had considerable alterations to buildings in our business area, where the upper floors have been cut off and the store is only part of the building occupied. As to the changing of the entire front, whereby all openings were closed above first floor, we have not permitted the closing of window openings and we have several buildings where the upper floors are cut off from first floor.

I believe the following section of our building code would govern the problem:

"Rooms in business buildings. Except as otherwise provided in this Chapter or by any other ordinance, every room in every business building hereafter erected, other than rooms specifically provided for by the State Labor Law, shall have one or more windows, opening directly upon a street or upon a court or yard, located on the same lot or plot as the building, or to be provided with some other means of lighting and ventilating as approved by the Commissioner."

Ambrose Sarricks, Chief, Wilkes-Barre, Pa.: With reference to older buildings being remodeled with decorative fronts, I am of the opinion that this type of building certainly constitutes a fire hazard and a menace, should a fire occur within its walls.

Our building code does not cover such alterations at present, and as I understand, a new building code is now being drafted by the city, and possibly some provision will be made covering the remodeling of buildings with decorative fronts.

Ed P. Welch, Chief, Columbus, Ohio: To date no building has been erected in the city of Columbus, Ohio, in which the upper stories have been closed up solidly in masonry or glass brick construction. However, we have had one or two cases in which the window openings in one of the upper stories had been closed up temporarily and completely with a continuous sectional metal wall sign, but in these cases it was required that a section of the sign in front of the window be hinged in order that it might be opened in event of a fire.

We have no local ordinance covering such openings, but the State Building Code covering factory, mercantile and office buildings requires adequate light and ventilation by windows and skylights. Two fire-proof means of egress are required under the State Code in most cases, and certain types and size of buildings require a sprinkler system. It is entirely possible under our present code to erect or remodel a building without any exterior openings in the upper stories and without a sprinkler system. It is evident that a fire in a building so constructed cannot be successfully fought. This was made apparent by the recent fire in the Government Archives Building at Washington, D. C.

It is obvious that an ordinance requiring unobstructed openings in the upper stories at certain intervals and equipped with windows or shutters, so arranged that they may be readily opened by the firemen, will be needed by the city in the very near future.

The trend towards modernistic architectural design, glass brick, and air conditioning all tend toward eliminating window openings in upper stores. Such construction brings into existence serious fire hazards and makes difficult fire fighting, as it can be readily seen that it would not be practical to breach a wall in the upper portion of the building to gain access to the interior in event of a fire.

Brooks McClure, Chief, Huntington, W. Va.: Our city is confronted with the same hazards you speak of. In remodeling old buildings by closing up the fronts without windows, the only solution to this problem is to have a national building code passed regulating these hazards by having ventilators enough to carry off smoke and gases through the roof. The law should compel doors and windows in rear.

Thos. F. Burns, Chief, Bridgeport, Conn.: We are confronted with the same problem here in Bridgeport, and regret that as yet we have no code or ordinance to prevent this procedure which is undoubtedly a fire hazard. This condition, which has become more prevalent in the past year in this city, has been called to the attention of our Building Commissioners and other officials, and we are in the hope of soon drafting an ordinance to eliminate these hazards. At present the only thing we do is to try and convince the owner of this hazard and if possible talk him out of such structural changes.

Thomas F. Cavanaugh, Chief, Waterbury, Conn.: Our building code is being revised to include these conditions as well, as other modern conditions that have arisen since the code was enacted.

Howard Travers, Chief, Baltimore, Md.: The building code of Baltimore does not cover these situations satisfactorily at the present time.

The Bureau of Buildings, however, will not issue a permit for windows in the front of existing buildings to be closed above the first floor, nor a permit for a building without windows to be erected within the corporate limits of the city of Baltimore, unless of fireproof construction, or fire resisting materials, and equipped with sprinkler system throughout.

S. Ferguson, Chief, Fort Worth, Texas: Excerpts from our building code answer the problem submitted:

"No work or repairs shall be done upon any structure, building or shed, nor shall any mechanical installation, such as plumbing, heating electric wiring or elevators be installed in same, within the city of Fort Worth (excepting as herein mentioned) without a building permit from the Building Commissioner.

"Repairs of buildings or structures, or mechanical installations, the cost of which will not exceed fifty dollars, may be made without securing a building permit, but such repairs shall not be construed to include cutting away of any masonry wall or structural member, or any portion therof, nor the removal, change or closing of any stairway, nor the construction of any chimney. Permits must always be secured for electrical or plumbing work regardless of extent."

W. Q. Dowling, Chief, Jacksonville, Fla.: When the Building Commissioner is asked for a permit to remodel an old building, he notifies me and we go over the plans and alter it if needs be, to make it as safe as possible, and by all means to have access to the upper floors of the building from the outside.

Our building ordinances cover the subject.

J. E. Parrish, Chief, San Diego, Cal.: We have no experience with the conditions mentioned. Our building code requires that any person contemplating changing a building must have the approval of the Building Inspector before such changes are made. I believe that our Building Inspector would not approve such an alteration as the case cited.

* * *

Answers to Previous Question

The following replies are in answer to a previous question on running the motors of fire apparatus in the fire house each day as a guarantee that the motors are in proper condition:

R. R. Davis, Chief, Fullerton, Cal.: There is no sure way of being positive that motor will start, but if the battery is kept charged, connections tight, gasoline in the tank and the motor in good condition, it is helpful. I believe a road test of about half an hour once a week is a good practice. Starting the motor daily causes crank case dilution, wipes cylinder walls dry, and increases wear.

E. F. Beville, Chief, Gainesville, Fla.: We start the motors twice a day, at the change of platoons. I believe if the driver will cut off the motor without racing it, there will be very little harm to the motor. I do believe, however, that racing the motor and leaving a charge of gasoline in the cylinders will dilute the oil and consequently harm the motor.

E. A. Brimley, Chief, Greeley, Col.: We start and run our motors about five minutes every morning at the change of platoons. A careful check is made of the battery and the ignition and motor to see that they are in good working order. We have never had any trouble in starting our motors in the past. I believe that starting the motors once a day is better than just starting and running them once a week. I believe it is more necessary to start them once a day.

R. M. Milan, Chief, Huntsville, Ala.: Motors are run from ten to fifteen minutes in the morning and then carefully checked, considering weather conditions. I suggest a road test for every thing but the pumpers, and a pump test for them once a week.

Starting a motor twice a day is not harmful to a machine, for it acts to keep all oil free to circulate and also prohibits sediment.

Weather in the south is changeable and the starting of apparatus twice a day tends to keep an even temperature of motors, which makes for easier starting.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Lubricating Couplings

To the Editor:

Please give me information you have about a solution to use on 2½-inch hose couplings to loosen connections when they canker up, and that will not damage the hose.

J. C. W.

Answer: Powdered graphite is recommended for use in keeping couplings in free running condition. Oil in any form should not be employed, in view of the possibility of the oil being applied too freely, resulting in damage to the fire hose linings.

Officer in Seat with Driver

To the Editor:

Could you explain what advantage there is in an officer in charge riding the front seat of a fire apparatus?

What disadvantage is there when an officer rides the rear platform of apparatus, when aswering a fire call.

A. T. P.

Answer: The chief advantage of an officer riding in the front seat with the driver is to make sure that the driver obeys the rules of the department with regard to safe driving. The presence of the officer in the driver's seat has a beneficial effect upon the manner in which the truck is driven.

Apparently that is the thought Fire Department officials had in mind when they set forth the regulation that the company officer must ride with the driver.

A 600-Foot Suction Line

To the Editor:

We received a call over the telephone. The caller stated that there was a fire in a clothes closet at a certain address on a long, narrow, curving street. Upon arrival we found the nearest hydrant to be about 600 feet away (on the side we were approaching) from the house.

Not being able to see the house on account of the curve of the street and other buildings, we decided to use the booster pump and back it up from the hydrant by making a lead from the hydrant to the fire. The ground being level and having a 90-pound hydrant pressure, we figured we would have all the water we needed.

When we pulled up at the fire we found, instead of a clothes closet fire, a basement fire. It was mushrooming through the walls and coming up through the clothes closet, cutting off the stairway and trapping a man and his wife and their three small children on the second floor of a two story, eight room, frame house.

We had one pumper and half the hose was on the ground. It was 800 feet to the next hydrant and it was impossible to back up or turn around. We decided to use the hydrant lead for a soft suction by attaching it to the intake of the pumper.

How many 200 feet leads of 2½-inch hose, with one-inch tips, giving good fire streams, could this 750-gallon pumper support on the supply from this 2½-inch suction?

Could it support two 200-foot leads with one-inch tips and one 200-foot lead equipped with a fog nozzle?

A. N. K.

Answer: A hydrant at 90 pounds pressure could supply through a single line of 2½-inch hose 600 feet long not more than 230 gallons per minute to the pumper.

You will understand this from the following figures:

Flow G.P.M.	Friction Loss, 600 Feet 2½-Inch Hose
200	60.2 pounds
220	72 "
230	79 "
240	84.6 "
260	98.4 "

In other words, with 230 gallons flowing through the line of hose, we would have 79 pounds friction loss and only 11 pounds at the end of the line of hose to supply water to the engine.

230 gallons per minute would supply but one good one-inch stream.

A one-inch nozzle at 30 pounds nozzle pressure delivers 162 gallons per minute.

A one-inch nozzle at 40 pounds pressure delivers 187 gallons per minute.

A one-inch nozzle at 50 pounds pressure delivers 209 gallons per minute.

From these figures, you will see that you can count on but one good one-inch stream from the engine supplied by a hydrant, at 90 pounds pressure forcing water through 600 feet of 2½-inch hose.

Pressure From Tandem Pumpers

To the Editor:

Will you kindly enlighten me on the following question:

Two second size pumpers, rated at 700 gallons at 120 pounds, are in operation and the pressure is boosted to 300 pounds on each pumper. If they are hooked in tandem, would the pressure be the same as one 1,000 gallon pumper giving 600 pounds?

Would it make any difference how many pumpers were hooked together? Could they give you any more pressure than the maximum pressure of the first pump when pumping up to a great height?

M. M. S.

Answer: The first question is somewhat vague. If the two second size pumpers were each capable of giving 300 pounds pressure, and pumps employed were of the centrifugal type, then the two engines placed in tandem would give you approximately 600 pounds pressure at the discharge of the second engine.

Pressure may be increased by placing engines in tandem. With the type of pump described above, the pressure is proportional to the number of engines in tandem. For example, two engines each operating at 300 pounds pressure, would give approximately 600 pounds when operated in tandem; three engines would give approximately 900 pounds when operated in tandem, the 900 pounds pressure, being at the discharge side of the last pump in line.

Total Pumpage

To the Editor:

Recently our water works had trouble with two wells going dry. It was necessary for us to pump water from the nearest town. I would like to know if you could tell what amount of water we pumped. We had one of our V-8 Ford-Seagrave pumpers running for 16 hours. Two stops of five minutes each were made to check oil. We had the pumper connected to the hydrant at our nearest town with 1,200 feet of 2½-inch hose running to the nearest hydrant in my town, with a pump pressure of 110 pounds and hydrant pressure of 38 to 40 pounds, pumping against 18 pounds in our mains.

L. H.

Answer: As the pump pressure is 110 pounds, and the hydrant pressure into which you pump is 18 pounds, the friction loss in the line would be 110—18, or 92 pounds. The friction loss of 92 pounds for 1,200 feet of hose represents a loss of 92 divided by 12, or 7⅔ pounds per 100 feet.

For rubber lined 2½-inch hose, a flow of 173 gallons per minute gave a friction loss of 7⅔ pounds per 100 feet.

Hence this would be the flow through the hose line when engine pressure was maintained at 110 pounds and the hydrant pressure into which the engine discharged was maintained at 18 pounds pressure.

The pump is in operation for 16 hours, minus two stops of five minutes, each or 10 minutes; hence it is in operation 15 hours and 50 minutes. Fifteen hours and 50 minutes is equal to 230 minutes, and 230 minutes, pumping at 173 gallons per minute, gives 39,790 gallons, total pumpage.

By William Paul Babcock

"Read, Mark, Learn and Inwardly Digest"

THAT is what firemen all over the country are doing today, especially volunteers, and particularly gratifying it is to see how large a number of them are coming more and more to appreciate the value of salvage work and especially those who have the added advantage of attending a comprehensive course of instruction at a recognized training school.

The training school of the Nyack Fire Department graduated its first class on the evening of January 12, with 40 out of a starting 100—not bad, wot? The graduates had the distinct privilege of receiving their State diplomas from the hands of a real He-Man fireman and one who knows and has what it takes to conduct a firemanic training school—none other than Battalion Chief David Oliver, of the New York Fire Department Training School.

Another group of Rockland County firemen (all volunteers) made a pilgrimage to the New York Fire Patrol Salvage School on January 16 and obediently placed themselves under the discipline of Instructor Captain Cashman. They are still glowing with accounts of the interesting features and knowledge gained. Especially pleased are Chiefs Stewart Osborne, Monsey, N. Y., and Peter Keller, Tappan, N. Y., for now their men know what to do with the first salvage covers they have just installed.

* * *

A newspaper item concerning promotions in the New York Fire Department reminds me of a salvage lesson which should be preached constantly and with emphasis. That is, that salvage work begins with the first fireman on the job and, of course, with his officers. Efficient salvage work *can* be done without any salvage covers by hose and H. & L. outfits. And whereas many chief officers recognize this fact today, few did 21 years ago, when I began to study salvage. But, in my rounds in those days as an insurance inspector in the Greater City I met many fine gentlemen in the F. D., and I recall that one of the finest was at that time Battalion Chief in the Brownsville section of Brooklyn, and later a Deputy in the First Division. One of the finest things I learned about this gentleman was that he was very particular to prevent water damage in every way possible and often lent men to assist the Patrol details. He also had the reputation of handling most of his fires with first alarm assignment, which in those days was something. After all these years, he has, of course, forgotten me, but not I him, so here's wishing Deputy Chief Elmer Mustard:

The best of luck!

SEND IN YOUR NEWS

The Editor of "The Cover," invites Fires Chiefs and salvage company officers to submit items for publication in his column.

You fellows who are on the firing lines can do a service for the entire field if you will give this cooperation to Mr. Babcock.

Why not tell us of some of your experiences with salvage work?

THE EDITOR.

Chief Pickard Injured

D. G. Pickard, the seventy-two years old Chief of Mt. Vernon, Ohio, suffered a double compound fracture of his right leg while fighting a fire in the Masonic Temple building. He was injured when he slipped and fell into a six foot passageway. The same leg was broken while fighting a fire in 1928.

Firemen Re-Elect Flaherty

Daniel J. Flaherty, Pittsfield, was re-elected President of the Massachusetts Permanent Firemen's Benefit Association at the annual meeting, which was held in Boston on January 19. John J. Kelley, Lawrence, was chosen Secretary, and Frank B. Cook, Boston, was elected Treasurer. Reports showed a total membership of 4,916 and 48 deaths of members during the past year.

HARRY BELKNAP

Holiday Party Arranged by the Fire Chiefs' Club of Massachusetts for the Members and Their Ladies

Several hundred Chiefs and their wives attended the annual Christmas party of the Fire Chiefs' Club of Massachusetts that was held at the Parker House, Boston. Vaudeville entertainment followed the turkey dinner. Each lady was presented with a locket as a souvenir. Chief William C. Mahoney, of Peabody, presided at the dinner.

Our inquiring reporter overhauls the firemanic news of the day.

They Still Do It—and Sometimes Live

Irma Small, domestic servant, of Prince Albert (Sask.), was cleaning a dress in a bucket of—yes, you guessed it—gasoline, at bottom of a stairway in a two-story home, when gas exploded. When she came to, she found herself lying in second-floor hallway, uninjured. But house was wrecked. Indeedy, there's one born every minute!

Barber's Dummy Causes Uproar

We didn't know it until Quaker City fan sent us story, but now we understand some barber's use dummies on which they practice "finger waving." Well, over in Philly, women screamed, men ran bravely to the rescue as a flaming figure hurtled from a porch roof. But it proved to be just the dummy on which "Sam the barber" rehearsed his finger work and which Sam's son Louis, aged 6, playfully set afire.

Benzine Blasts Boys

Five boys, between ages of 5 and 8, were roasting potatoes over bonfire in the Bronx (N. Y. C.), recently, when one of 'em picked up supposedly empty 5-gallon benzine can and placed it over fire. Resultant explosion drove can into earth, showering boys with shrapnel-like stones and gravel. Passers-by called police and ambulances; four of the lads were sent to Lincoln Hospital. Inspector Louis Stein, Bureau of Combustibles, revealed that gases accumulated in benzine can caused blast.

Firemen Thumb Ride

Faces of three Needham (Mass.) firemen became red as their scarlet apparatus when they were forced to "thumb" a ride to scene of a fire after the transmission of their 21-year old combination truck dropped into the street, as they were responding to an alarm.

Police-Firemen "Burglars"

Our demon Yonkers (N. Y.) reporter tells us this 'un: Seems that police of Shonnard Place (Yonkers) Station got long-distance phone call from an excited Mr. Blaisted, in Washington, Conn., who asked 'em to rush to his house at 110 Hudson Terrace and see if his wife had left electric iron turned on. Sezze: "We left home at 2:30 this afternoon and she can't remember whether or not she turned off the iron. The whole house may be afire by now."

Police Lieutenant Ward rushed patrolmen in radio car, who found only way they could enter house was by means of ladder, so they called fire headquarters and Eng. 9 proceeded pronto and erected ladder, only to find second story windows locked. However, "needs must"—and Captain Kelly and his men, aided by minions of law, "jimmied" window, only to find iron cool and safe, although hooked up. Telephone message (collect) to Washington, Conn., "cooled off" breathless Mr. Blaisted.

A 'Bull' in Graybull (Wyo.)

Out in Graybull (Wyo.) the Vol. F. D. answered an alarm by dashing to their fire house to get their apparatus, but blaze destroyed a residence before they could get to scene. Some miscreant (or worse) had broken into said fire house during absence of men and siphoned all the gasoline out of the tanks of the trucks. Hum . . . mebbe it would be well to hire a watchman or two?

Wrong Time for Training

Thirty-five firemen of Chicago F. D. had swell time at a $200 blaze in the Hamilton Club, famous Republican hangout. They'd have had lot more fun if Battalion Chief Anthony Durkin hadn't interfered. Seems that when Chief arrived he found five firemen putting out the fire while other 25, coats off, and red-faced, were in Club gym, riding mechanical hosses, doing stunts on horizontal bars, flying rings and whathaveyou. "Wot goes on here!" yelled the irate Chief. "If you guys can't work, you can't play. Get back to quarters!" And they did. Like the firemen, the fire was put out.

Wot Boots It?

The proverbial absent-minded professor has nothing on a member of the Ringgold Fire Company (Pulaski, N. Y.) He dashed into street in response to an alarm and discovered he'd forgotten his boots. Dashing back to his room, he looked in mirror to find he was carrying his boots in his hand and was wearing a baseball suit instead of his regulation turnout. Talk about your "home runs"!

Hero Worship!

When Assistant Chief Harry Nestle, of Iowa highway patrol, planned to pay a farm boy handsomely for helping get his car out of the mud, the lad spurned the money. "There's one thing you could do for me, mister," he ventured, bashfully, "Let me hear your siren once." Boys have been known to do most anything for the sound of a siren.

K-9 Rescues

Firemen of Leominster (Mass.) went to rescue of three valuable dogs which broke through ice of a pond. Extension ladders, hooks, ropes, and nearly all equipment on the trucks except hose lines were used in getting 'em to shore.

*

Firemen of St. Paul (Minn.) had tougher job. When called to save mongrel dog from death in Mississippi River they found themselves cast in double rescue role. They had to go to rescue of a rescuer, Harold Anderson, who had fallen through the ice, while attempting to save the dog unaided. However, both victims were saved.

'Nother Dog Tale!

Severe burns on hand of 8-year-old Teddy Fogel of Reno (Nev.) were attributed to unique fire. It's said by Chief John Questa, of Reno, that the boy was petting his dog, which was tied to the rear of an auto, when static electricity generated from petting ignited fumes of gasoline, coming from the uncovered gas tank of the car. Doggone narrow escape, say we.

Home, Jeems! And P.D.Q.!

Vol. fireman Walter Hampton, Chadron (Neb.), will never forget the fact that when he heard the general fire call sounded and swung onto truck as it passed him on downtown street he had no idea he was responding to an alarm turned in for his own home. Firemen were surprised when they pulled up in front of burning home to have Walter yell "Come on fellows! This is my house."

Believe It Or Not

A cake of ice survived a fire at Mariaville Lake Casino, near Schenectady (N. Y.), although heat from blaze reduced heavy beams to ashes and melted metal. The ice was found inside a refrigerator after the fire.

Pump River Onto Fire

Just as morning worship was beginning in Proctor Christian Church, at Proctor, near Martinsville (W. Va.), fire broke out. Proctor has no hydrants or mains, but outside the church, inching up toward the village, were hitherto unwelcome waters of this rising turbulent Ohio River. Visiting firemen from Martinsville dropped suction into high waters, pumped freshets onto blaze, held damage to $4,000.

Note to contributors: If you do not read your news contribution in the next issue of FIRE ENGINEERING don't despair—if it's suitable it will utlimately find its way into print.

Editor, Watch Desk.

WHAT DO YOU KNOW?

The Editor of "The Watch Desk" welcomes contributions from readers of FIRE ENGINEERING that briefly give facts about interesting, odd things that have to do with fires, fire fighting, etc. Address "Editor, Watch Desk."

BOSTON BATTLES TWO FIRES IN BUILDING UNDER CONSTRUCTION

Salamanders Set Fire to Tarpaulins Hung to Enclose Open Floors — Fire Department Could Not Use Standpipe Riser

By Harry Belknap

THE Fire Department of Boston, Mass., was confronted with an unusual problem when flames broke out twice high in the air amid scaffolding surrounding the new court house tower now under construction, the first on December 22. Flying embers started numerous small fires on roofs of nearby buildings and created a serious conflagration hazard.

The following description of the premises where the fire occurred and of department operations at the first fire was prepared especially for publication in FIRE ENGINEERING by Chief Samuel J. Pope, of the Boston Fire Department:

"The building is 120 feet front, 158 feet deep and 337 feet high. The frame work of the building had been carried to its intended height of eighteen stories, which because of mezzanines was equal to twenty-five stories in height. The brick work on the exterior had been carried to between the sixth and seventh floors, where a wooden staging for the brick layers surrounded the building on the north and west sides. There was an areaway on the north side. Concrete had been recently poured on the tenth floor and a heavy tarpaulin surrounded the building on this floor. The construction had not yet reached the point where windows had been installed.

Sixty Salamanders in Use

"About sixty salamanders were in operation on the tenth floor for the purpose of drying the freshly poured concrete, the temperature being around freezing. The wind was from the northwest and blowing fairly strong, particularly on the upper floors. The fire originated on the tenth floor and was caused by the breaking of a rope which held the tarpaulin in place. This rope dropped across one of the salamanders and immediately ignited, carrying fire directly to the tarpaulin, which, due to the high wind, burned very fiercely. The building had both Fire Department and first-aid standpipes, but they were not in service for the Fire Department, as the outlet connections or siamese connections had not been installed. There was a small ¾-inch hand hose on the tenth floor which was used by the workmen, but they could not cope with the fire. The alarm was received by telephone and bell alarm simultaneously. This building is being erected on Beacon Hill, one of the highest hills in the city and the highest point to which our separate High Pressure System is installed.

"The first alarm response consisted of Engines 4, 6, 8, 35, Ladder Companies 24 and 1, Water Tower 1, Rescue Company 3, Deputy Chief of Division 1, and District Chief of District 4. Upon the arrival of the first companies the tarpaulin was completely involved, part of which had dropped to the bricklayers' staging on the sixth and seventh floors, which was burning briskly. Fire extended to combustible material used in construction on the various floors from the fifth to the eleventh. Parts of the burning staging and tarpaulin were being carried by the wind to adjoining buildings and areaway on north side of building.

"Engine Company 6 took two rolled lengths of 2½-inch hose, via elevator, to the seventh floor, lowered the line down outside of building, connected to line from high pressure hydrant, and operated on the fire on sixth and seventh floors.

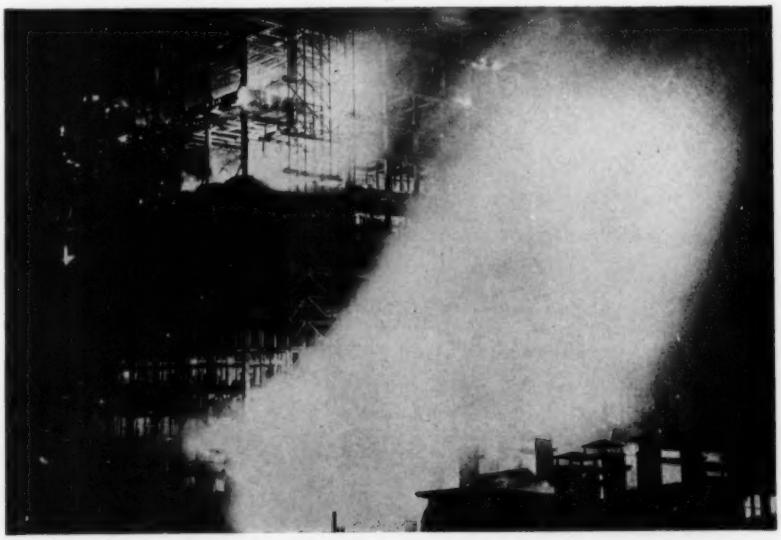
Spray Protects Other Buildings

"Engine Company 4 stretched and operated line from high pressure hydrant via interior stairway to sixth floor. Engine Company 8 stretched 2½-inch line via stairway to roof of five-story apartment house at 39 Somerset Street and operated on the fire across areaway on north side of building. Engine Company 35 stretched a line, via stairway, to fifth floor and operated same. Water Tower 1 was placed in position on Somerset Street side of building, west side, in such a position that it could sweep both the front of the building on west side and the areaway on north side. Four 3-inch lines were stretched into the water tower by the Ladder and Rescue Companies and the tower stream swept both sides of building. The stream was directed upward at intervals so that the spray would carry to the adjoining buildings, the tower operating from the windward side and to great advantage.

"Due to the fact that brands had carried to several buildings in the vicinity, a second alarm was sounded at 3:30 p.m. This alarm brought six more Engine Companies, 10, 50, 7, 38, 15, 3; two Ladder Companies, 8, 18; Water Tower 3; District Chiefs 3, 5 and the Chief of Department. Messengers were dispatched to have the second alarm response take position on the east side of the building in Pemberton Square and to cover buildings which had become ignited from brands. Engine Company 10 ran a fourth line to the water tower.

Chief Raises High Pressure

"Upon the arrival of Chief of Department, Samuel J. Pope, the pressure on the high pressure system was raised to 175 pounds due to the elevation of fire. Engine Companies 38 and 3 hauled lines over hose hoist on outside of building to 10th and 11th floors on Pemberton Square or east side. Engine Company 15 stretched and operated Booster stream, via fire escape, to roof of Howard Theatre, 34 Howard Street, to extinguish small fire in skylight on east side of main fire building. District Chief Donovan of District 3 used second alarm Ladder Companies and Engine Companies in extinguishing small fires that had dropped on buildings on the north and east sides of fire.



Second Fire at New Suffolk Court House, Boston, Mass.

Lessons Derived From Fire

"The fire was soon controlled and extinguished by the department in the manner described. There were some valuable lessons derived from this fire. First, the necessity of eliminating combustible material as far as possible in buildings under construction; second, the treating of any canvas or tarpaulin

used, particularly in the vicinity of salamanders, so that they will be as fire-resisting as decorations in theatres.

"Third, the absolute necessity of having standpipes with siamese available for use of the Fire Department during construction work.

"Fourth, the value of operating on the windward side of this type of outside fire as well as the lee, particularly in reference to the water tower. The stream and spray had a tendency to follow the brands, extinguish them and wet down exposed property.

"I was very much impressed with the efficient operation of our Department at this fire under the most difficult circumstances."

Fire a Dangerous One

The fire was a potentially dangerous one especially in view of the high wind and the many old structures adjacent to Scollay Square, which were directly to leeward of the Court House Tower.

High praise was bestowed upon the officers and men of the department for the way in which the situation was handled and the speed with which the fire was extinguished.

A large detail of police aided in keeping the crowd of spectators at a safe distance. A humorous incident occurred when a bar tender on Howard Street dashed out with a foaming stein of beer and hurled the contents on a blazing automobile top which had ignited from falling embers.

The Second Fire

A second spectacular fire occurred on the night of January 11 in the scaffolding and tarpaulins on the new Suffolk County Court House Tower under construction in Boston, Mass. The blaze flared like a giant torch, scattered burning brands on nearby buildings, and caused the sounding of four alarms in rapid succession.

The second fire was the more serious of the two, and caused damage estimated at $40,000. Rumors of incendiarism are being investigated by the arson squad; but it is thought probable that an overturned salamander used in drying concrete caused the blaze.

The first alarm was received at 5:31 p.m., followed by a second alarm at 5:33. Chief Samuel J. Pope, who had picked up the first alarm on the radio in his car, went to the scene on the second alarm, and ordered a third at 5:37 and a fourth alarm at 5:42.

The building, which is 327 feet high, had been bricked as far as the ninth floor. Tarpaulins surrounded the ninth, twelfth and thirteenth floors, above which there was only skeleton steel work. There was much lumber and wood scaffolding on various floors and upon arrival of the first apparatus, the structure was enveloped in flames from the ninth to the fourteenth floors. Salamanders had been in operation to dry concrete on the twelfth floor, and on a staging at the ninth floor.

How the Fire Was Fought

The fire was fought by hand lines from small standpipes which had been connected since the previous blaze. Firemen took hose up by elevator to the eighth floor and from there to the fourteenth floor. Third alarm companies took hose lines to the roof of the old court house, which was being showered with burning embers. Chief Pope ordered the pressure on the high pressure hydrants raised to 200 pounds. Hose lines were connected to two water towers, one of which was raised on Somerset Street and the other in Pemberton Square, on the east side. The stream from the tower on Somerset Street was directed upward and reached the ninth floor, and was also used to wet down surrounding buildings. Lines of hose were taken to the roof of the Old Colony Chambers Building and to the roof of the Howard Theatre. Four Eastman portable guns and 14 hand lines were operated.

The amount of hose laid was 7,100 feet of 2½-inch, 3,000 feet of 3-inch, and 1,000 feet of ¾-inch hose. Eight high pressure hydrants and six post hydrants were used. Twenty-one motor pumping engines and hose wagons, six ladder trucks, two water towers, one rescue company, two lighting plants, and the wagons of the Boston Protective Department were at the scene.

Chief Pope was assisted by Deputy Chief Louis C. I. Stickel, District Chief William F. Donovan, District Chief Daniel Crowley, Acting District Chief John A. Morissey, and Acting District Chief Alonzo Hughes. Fire Commissioner William Arthur Reilly attended. It was the first large fire since he took office.

Chicago Has Run of Fires

Five firemen were overcome by smoke when a series of 3-11 fires caused $150,000 damage and kept Chicago firemen on the jump on January 12. Despite the fact that the three fires occurred within a radius of two miles and that some companies were still engaged at the first fire when the second 3-11 was struck, expert handling in assigning of companies by John Gegan, Chief Fire Alarm Operator, and his staff allowed for adequate coverage in all parts of the city.

The first of the fires occurred in a studio apartment building at 55 East Superior Street, driving scores of residents into the sub-freezing cold. It was at this fire that the first casualty was suffered by Lieut. James Heaney, Engine 11. He was soon revived through oxygen administered by members of Squad 1.

Several hours later residents of the Bismarck Hotel and the Steuben Club, in the shadow of Central Fire Alarm Headquarters, in the City Hall, were driven from their beds by dense smoke which poured from the nearby Clock Building at 211 West Randolph Street. The smoke also hampered the work of more than 100 long-distance telephone operators in the Illinois Bell Telephone Company Building, directly across the alley from the fire. True to tradition, all stuck to their posts. Nauseous smoke overcame four firemen, who were quickly revived.

A man, who gave his name as "James Dugan," was arrested on suspicion of arson in connection with this fire by Fire Attorneys Frank Kearney and Earl Downes. According to Kearney, "Dugan" later admitted his name was Peter Swider and that he had a police record. He was picked up after he claimed to have turned in the alarm from a corner cigar store.

A check revealed that no cigar store was open in the vicinity at that hour and that the alarm had come from 211 West Washington Street.

The last 3-11 blaze broke out at the height of the noon rush hour in the one-

Three Small Los Angeles Factories Swept by Fire

Three small factories in the industrial section of Los Angles, Cal., were damaged by fire. The photograph shows the flames shooting out of the factory of the Central Cabinet Manufacturing Company.

story brick building of the United Motor Express Terminal at Clinton and Polk Streets. According to Fire Commissioner Michael Corrigan, the blaze started either when a gasoline stove or a fuel tank on one of the trucks exploded. Flames raced over the oil-covered floor of the big garage, forcing twenty truck drivers and employees to the street. Chauffeurs managed to drive away three huge trailers parked at the loading platform, but were unable to save another large truck-trailer loaded with merchandise, or merchandise piled on the platforms surrounding the garage.

Fire Commissioner Corrigan, Anthony J. Mullaney, Deputy Chief Fire Marshal, and Deputy Marshal Joseph Mackey were in charge at the fires. Chief Alarm Operator Gegan estimated that a total of 100 companies had moved on the 3-11's, about eighty of them doing actual fire duty.

ROBERT GREENOCK.

WHAT'S BURNING

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of January, 1938. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending January 31	Loss in Thousands of Dollars
Cleveland, Ohio—St. James A. M. E. Church destroyed	50
Holliston, Mass.—Pumping Station of Holliston Water Co.	50
Lawrence, Mass.—Bldg. occupied by McCabe Mfg. Co.	165
Astoria, Ore.—Dixie Bakery damaged	50
Winchester, Va.—Bldg. occupied by Sempele restaurant and apartments	60
Cameron, W. Va.—Two business buildings destroyed	65
Cleveland, Ohio—Residence of D. S. Ingalls, Pepper Pike Village	75
Gloucester, Mass.—Kerr block, housing business establishments	125
Oklahoma City, Okla.—Beatrice Creamery Co. plant damaged	50
Lancaster, Pa.—St. John's Episcopal Chaurch damaged	65
Lusk, Wyo.—Boyd Chevrolet Company bldg. destroyed	50
Brady, Texas—Two school buildings in Melvin community	50
Hamilton, Ohio—E. H. Frechtling grocery bldg. destroyed	100
Morrisonville, N. Y.—General store and two dwellings	50
Cedarville, Mich.—Post office and adj. property	50
Scottsboro, Ala.—Whse. of North Alabama Whse. Co., and 4,000 bales of cotton	165
Laurel, Miss.—Penney store, Jean Theatre, and other property	80
Sault Ste. Marie, Mich.—Property of H. P. Hossack and G. Lefleur	50
Chicago, Ill.—Motor Terminal bldg., south of Loop	80
Trevorton, Pa.—Tressler Log Cabin Inn, destroyed	70
Saukville, Wis. — Basken Rendering Plant, destroyed	50
Cohoes, N. Y. — Old Wertime Homestead, owned by W. H. Wertime	50
Bridgeport, Conn. — Barnum School Bigs., destroyed	100
Greenville, Ala. — Bldg. of Butler County High School, damaged	50
Benton Harbor, Mich.—Property of F. L. Deaner & Son basket factory, King's Landing Rd.	50
Chicago, Ill.—Factory bldg. at 2241-47 Indiana Ave., damaged	80
Los Angeles, Cal. — Victory Motion Picture Corp. Studio at Palms	80
Montreal, Que.—Bournival Bldg., destroyed.	125
La Tuque, Que. — Ortenberg and Lamothe bldg., destroyed	50
Stamford, Tex.—Seed house of Rule-Jayton Cotton Oil Co.	50
Great Barrington, Mass.—Collins block, housing business establishments	50
Pawtucket, R. I. — Business and apartment bldg., downtown section	70
Palatka, Fla.—St. James Methodist Church damaged	55
Ravenna, Ohio — County Highway Garage destroyed	125
Millburg, Mich. — Gelder Bros. whse. and adj. property	50
Dracut, Mass.—Ste. Terese's Catholic Church destroyed	50
Memphis, Tenn.—Plant of William Lumber Co.	50
New Kensington, Pa.—Hart Dry Goods Co. store destroyed	65
Deep Water, N. J.—Plant of E. I. duPont de Nemours Co., destroyed	80
Montreal, Que.—Three-story manufacturing bldg., 5220 St. Lawrence Blvd.	50
Weeping Water, Neb.—Five bldgs. on Main Street destroyed	60
Kennedy, Minn. — Johnson Implement Co. destroyed	50
Moncton, N. B. — Business and apartment property (Mabel block)	80
Trenton, N. J.—Business property on South Broad St., damaged	165
Ionia, Mich.—Dairy barn of Michigan State Reformatory	50
Tallahassee, Fla.—Main residence on G. F. Baker plantation	65
Sisseton, S. Dak.—Wolf dept. store and adj. property	50
Corpus Christi, Tex.—LaQuinta ranch headquarters house	80
De Forest, Wis. — Factory of Oconomowoc Canning Co., destroyed	125
Rumson, N. J.—Dwelling of Louise Willisson, damaged	80
Evansville, Ind. — Half block of business property	200
Toledo, Ohio—Catholic Church school, York Street, destroyed	50
Arp, Tex.—Genter Hotel destroyed	50
Charleston, S. C. — Isle of Palms Hotel pavillion destroyed	50
Vineyard Haven, Mass.—Briggs department store destroyed	50
Boston, Mass.—Business and apt. bldg., Back Bay Section	50
Leslie, Ark.—Mays Manufacturing Co. plant, destroyed	50
Cleveland, Ohio — Stadium Square Aparts., Cleveland Heights	70
Barbourville, Ky.—Business and apartment property	80
Tipton, Ind.—Stokely Bros. Canning factory, destroyed	200
Herrin, Ill.—Hippodrome Theatre destroyed.	170
Fayetteville, N. C.—High school bldg. Eastover township	50
Marvell, Ark.—Taylor's liquor store and adj. property	50
Fort Dodge, Iowa—Club Fort Dodger, destroyed	50

New Fire House at San Fernando

A two-story fire station has been erected at San Fernando, Cal. The lower floor houses the three pieces of fire apparatus, and the second floor has quarters for the men.

2-38
FIRE FACTS
BY OTIS SMITH
(US)
THIS IS THE 12TH EDITION OF FIRE FACTS
SPRINKLERS CONTROL — 96% OF FIRES OCCURING IN SPRINKLERED BUILDINGS ARE EITHER EXTINGUISHED BY THE SPRINKLERS OR HELD IN CONTROL UNTIL AID ARRIVES.
IF A SODA-ACID EXTINGUISHER IS NOT RECHARGED ANNUALLY THE ACID IS RENDERED WORTHLESS BY THE MOISTURE IT ABSORBS.
THE BICARBONATE OF SODA SOLUTION ALSO CHANGES. THIS CHANGE HAS A CORROSIVE ACTION ON THE EXTINGUISHER.
CHANGING SODA-ACID TANK TO PLAIN WATER BY CONNECTING A CARBON DIOXIDE CYLINDER TO THE TANK.

New City Hall and Fire Headquarters for Pawtucket, R. I.
The Fire and Fire Alarm Headquarters Building is shown at the extreme left

PROGRAM OF MODERNIZATION FOR PAWTUCKET, R. I., FIRE DEPARTMENT

New Fire Department and Fire Alarm Signal Headquarters Building and System is Dedicated and a Modern Sedan Pumper is Successfully Tested

ON January 10 thousands of citizens of Pawtucket, R. I., took advantage of the formal public opening of their new Fire Headquarters building to inspect the Gamewell fire alarm system, witness demonstrations of the Ahrens-Fox sedan type Piston Pumper and closed body service ladder truck, and look over all parts of the wing of the new City Hall, which is the modern Headquarters and Fire Alarm Central Office of the Pawtucket Fire Department.

The City Hall has been erected with PWA grant and loan and exclusive of land and furnishings represents a cost of about $400,000. Adding to this, the cost of the complete new Gamewell fire alarm system, new fire apparatus, and miscellaneous furnishings of the City Hall and Police and Fire Department wings, the improvement represents an investment of approximately one million dollars.

Program of Modernization

In connection with the general plant improvement—new buildings, fire alarm and radio signal systems, and modern apparatus, Mayor Thomas P. McCoy and Director of Public Safety Harry F. Curvin have embarked on a comprehensive program of modernization and improvement of the Fire Department which has already resulted in the completion of the headquarters building, the putting into service of the additional engine and ladder companies required for the manning of the new apparatus at headquarters, the addition of forty men to the uniformed force, the appointment of another Deputy Chief, and the installation of the two-platoon system. The department now consists of Chief Napoleon Taupier, Deputy Chiefs William T. Connolley and James McCaffrey, eleven captains, eleven lieutenants, and eighty-five firemen, organized in seven engine and four ladder companies in seven stations.

Fire Headquarters and Fire Alarm Station

The fire headquarters wing of the City Hall is separated from the main building by a fire wall and is so situated that full credit is received for an isolated Fire Alarm Central Office. The building is separated from the nearest exposures by the Blackstone River in the rear of the structure and large open areas on the other sides, which are being formed into a City Hall Park.

The Fire Alarm Office extends across the rear of the apparatus floor, being separated by fire resistant walls and openings. On the second floor are the offices of the Chief and Deputy Chiefs, dormitory, recreation rooms, officers' quarters and bath and locker rooms. In the basement are store-rooms, garage and complete shop facilities for the maintenance of apparatus and fire alarm system. The basement floor is at ground level in the rear of the building and will be easily entered by the largest apparatus.

Formal Opening of the Station and Demonstration

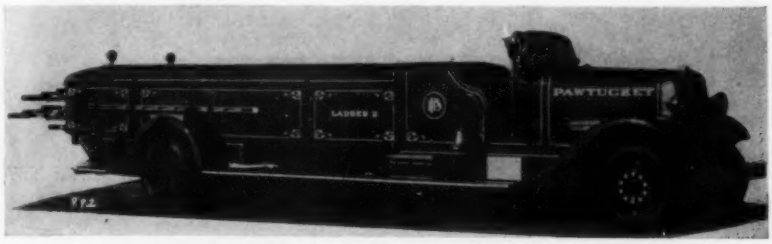
Fire Chiefs and other officials were invited from all parts of New England to the formal opening of the new headquarters on January 10 and the demonstration of the Ahrens-Fox sedan type pumper at Slater Park. After the various pumping tests had been completed, the visitors were the guests of the Ahrens-Fox Company at buffet lunch in the recreation building at Slater Park.

New World's Records Claimed at Test of the Pumper

What were claimed to be world's records were made by the new pumper at the Slater Park demonstration. On one test this engine, which is rated at 750 g.p.m., delivered 935.5 gallons at 250 lbs. net pump pressure, developing approximately 2½ times its rated water horsepower. A spectacular test was made by pumping through 110 sections

Ahrens-Fox New Sedan Type Pumper

—5,500 feet—of 2½-inch hose in a single line. On the first try with this layout several sections of hose burst after the pump pressure had reached 450 pounds and before the water had traveled through the more than a mile of hose



Enclosed Ladder Truck for Pawtucket, R. I.

to reach the nozzle. After the burst lengths had been replaced another attempt was made and without further mishap an effective fire stream was produced. Suction was from the lake in Slater Park.

The sedan pumper seats nine men—three on the driver's seat and three on each of two lengthwise seats placed forward of the hose compartments and reached by an aisle through the center of the body. This arrangement permits a hose capacity of 1,800 feet of 2½-inch standard fire hose, and ample mounting space for the standard equipment of an engine company. The booster tank is of 100 gallons capacity, with the booster hose carried on reel at the rear of the apparatus.

The Fire Alarm Signal System

The fire alarm signal system, which was demonstrated to the visitors by Deputy Chief Connolley, is of the latest type. The signal room is situated in the rear of the station. A feature is the "Vocalarm," which enables the operator to talk with each station separately or with all stations collectively. A siren has been placed on top of each fire alarm box and sounds when the alarm is pulled. This is intended to discourage false alarms.

Conference Held at Worcester

In spite of bad weather conditions, which included icy roadways and a pouring rain, there was a large attendance at the annual Fire-Fighting Conference which was held in the Memorial Auditorium in Worcester, Mass., in connection with the Union Agricultural Meeting, on January 7.

George O. Mansfield, Chief Fire Inspector of the Massachusetts Department of Public Safety, presided. The speakers at the morning session were Ernest J. Dean, Massachusetts Conservation Commissioner; Crosby A. Hoar, U. S. Forest Service; and Chief Ray D. Wells, Falmouth, Mass., Fire Department. The latter described in a graphic manner "The Progress of Radio Communication on Cape Cod in relation to Forest Fire Control."

At the afternoon meeting the speakers were Stephen C. Garrity, State Fire Marshal of Massachusetts; John M. L. Groby, American District Telegraph Company; A. von Thaden, United States Chamber of Commerce; and W. L. Lloyd, Jr., General Electric Laboratories, Pittsfield, Mass.

Commissioner Dean said that in 1937 there were 2,066 forest fires in Massachusetts which caused two deaths, destroyed 36 buildings, and burned over hundreds of acres of woodland.

Mr. von Thaden said that last year farm fires alone caused a loss of $150,000,000 and took 2,500 lives. Mr. Lloyd told of the hazards of lightning and illustrated his talk with slides and motion pictures.

HARRY BELKNAP.

Hoseman Banqueted

A most unusual tribute was paid to a private in the Boston Fire Department recently when the Chief of Department, Deputy and District Chiefs, Captains, Lieutenants, comrades and over 300 friends attended a testimonial surprise banquet given at the Fort Hill Square Fire Station, Boston, Mass., in honor of Hoseman Thomas Wren, Engine Company No. 25, who has been at this house for 32 years.

The apparatus was drawn to the street and banquet tables set up on the main floor. So large was the crowd that two sittings were required. The building was decorated with flags and streamers. Speeches and an entertainment followed the dinner. The motion pictures of the Boston Fire Department were also shown.

Among those at the head table with Hoseman Wren were Chief Samuel J. Pope, Deputy Chief Thomas H. Downey, Deputy Chief John F. McDonough, Deputy Chief John J. Kenney, who served as Toastmaster, and Ex-Chief Henry A. Fox. All the officers and privates, active and retired, who had seen duty at the Fort Hill Square Station were invited. The affair was held on the evening of December 4. Mr. Wren was given a purse. Lieutenant John Martin, Engine Company No. 25, had charge of the arrangements.

HARRY BELKNAP.

I. A. of F. F. to Meet in Atlanta

The annual convention of the International Association of Fire Fighters is to be held at the Atlanta Biltmore Hotel, Atlanta, Ga., August 29 to September 3. Convention details are being handled by the Atlanta local.

Capt. Finneran Honored

Capt. James F. Finneran, who has served the East Orange, N. J., Fire Department for forty-two years, was given a testimonial dinner by the Board of Fire Commissioners, friends and associates, to mark his retirement from the service. He was presented with a gold watch and chain by friends, and a set of resolutions by the Board of Fire Commissioners.

He was Secretary of the Police and Fire Department Pension Fund since 1905 and Secretary-Treasurer of the East Orange Firemen's Relief Association for twenty-five years. He was Secretary of the Firemen's Mutual Benevolent Association for fifteen years. He boasts he missed only eleven days from active duty since 1896.

WHO'S WHO IN THE FIRE SERVICE

Beginning with the March issue, FIRE ENGINEERING will publish serially a roster of all members of the International Association of Fire Chiefs.

The aims of this innovation are twofold:

First: To let the Fire Service know just who constitute that unselfish body of men who are striving to better the service and reduce the staggering loss of life and property from fire;

Second: To disclose to the field the high caliber of personnel which makes up the Association.

The order of publication, by District Associations, will be as follows:

New England
Eastern
Southeastern
Great Lakes
Missouri Valley
Southwestern
Pacific Coast

Names of those enrolled up to thirty days before publication date will be included in the roster as published.

THE PUBLISHERS.

ANALYSIS MADE OF ARSON CASES IN DETROIT FOR SEVENTEEN YEARS

Arson Squad Reports Most Successful Year Since Its Inception in 1921—Pyromaniacs Cause Most Incendiary Fires

By George W. Smith
Detective Lieutenant, Detroit Arson Squad

THE year 1937 has been the most successful year of the Detroit Arson Squad since its inception sixteen years ago. The number of convictions obtained is the largest number for any one year, and the incendiary loss is the lowest, being approximately seven per cent of the incendiary loss for the year 1921, which was the year preceding the organization of the squad.

Organized gangs of arsonists who specialized in fraud fires do not exist any more, as is indicated by the small number of such fires for this year. However, we still have the individual to deal with, who sets fire for gain. One of the outstanding cases of this type during the year occurred July 23 at 418 Holbrook Avenue, where a fire was set to the household goods on the second floor of a two-story frame building for the purpose of defrauding the insurer. Two small children who were asleep on the first floor, barely escaped with their lives. The guilty person was promptly arrested, convicted and sentenced to a maximum of twenty years in prison.

Juveniles presented a considerable problem during the year, being responsible for a number of fires, several of which might easily have caused large property losses or the loss of life, if they had not been discovered immediately and the Fire Department promptly notified. One such fire was set in a dwelling house by a boy just under seventeen years of age. Unfortunately, a waiver of jurisdiction by the juvenile authorities, which would have permitted us to try him in criminal court, was refused. He was sent to a hospital for observation instead. He later escaped from the hospital and committed murder before he was apprehended. Juvenile authorities then waived jurisdiction and he pleaded guilty to murder in criminal court and was sentenced to life in prison. Another juvenile set five fires in an apartment house and four fires in three downtown theatres, which were crowded to capacity at the time, and in which panics were barely averted. This boy was apprehended and upon examination by a psychiatrist, was found to be a pyromaniac. He was committed to an institution for mental treatment.

In the classification of fires by motive, those set by pyromaniacs again predominated. However, this is not to be wondered at, when consideration is given to the fact that every institution in the state for the insane is filled to overflowing, making it very difficult to get others committed. One of our leading psychiatrists just recently stated that in Detroit there are 1,200 insane persons living with relatives, without proper treatment, often without proper supervision and always a potential menace. Certainly there are a number of pyromaniacs in this group, in whose footsteps fire will follow as long as they are permitted to remain at large.

OCCUPANCY	MOTIVE									
	TO DEFRAUD		REVENGE		PYROMANIAC		CONCEAL OTHER CRIME		MALICIOUS MISCHIEF	
	No. of	LOSS	No. of	LOSS	No. of	LOSS	No. of	LOSS	No. of	LOSS
Apartment Houses	3	1388.69	1	280.00	8	1709.46				
Automobiles	1	50.00	7	1890.00	1	5.00				
Barns & Sheds			2	205.00	7	660.30				
Beer Gardens					1	0				
Beer Stores	1	417.49								
Churches							1	985.40		
Cigar Factory							1	2100.16		
Cleaning Plants			4	750.00						
Dwellings (Occupied)	9	10523.59	9	4008.66	10	478.66	4	8874.91		
Dwellings (Vacant)			1	236.00			1	0		
Furniture Stores	1	477.89								
Gasoline Pump									1	18.80
Grocery & Meat Markets	2	3381.34					1	15.00		
Garages			1	0	4	115.00	1	21.60	1	0
Garages (Service)			1	552.80			2	5342.00		
Ladies Wear Store	1	1281.45								
Lumber Mill					1	0				
Pawn Shop							1	30.00		
Restaurant			1	25.00						
Rooming Houses			1	2350.00						
Schools					1	90.00				
Tent			1	200.00						
Textile Mfg	1	6147.68								
Theatres					4	454.00				
TOTAL	19	23668.13	29	10497.46	37	3512.44	12	17369.07	2	18.80

Classification of Incendiary Fires According to Occupancy, Motive and Loss

Incendiary Fires Less Than One Per Cent of Total

The 100 incendiary fires represent less than one per cent of the 11,493 fires which occurred during the year. The $55,065.90 incendiary loss is approximately two per cent of the total fire loss of $2,532,281.89. The per capita incendiary loss for the year was approximately three cents.

While off regular duty, members of this squad responded on call to seventy fires of suspicious or incendiary origin or multiple alarm fires. During the year, 39,973 miles were traveled in connection with fires investigated.

YEAR	Fires Investigated	Accidental	Incendiary	Arrests	Convictions	Acquitted by Jury	Nolle Prossed	Warrant refused by Prosecutor	Dismissed on Examination	Directed Verdict Not Guilty	Discharged by Department	Died Awaiting Prosecution	Turned Over to Other Departments	Bond Forfeited
1921*	37	18	19	14	2			5			3			
1922	193	134	59	18	3	3	5	11						
1923	282	252	30	18	5	1	1	4	2				3	
1924	307	260	47	17	8		3	8					4	
1925	361	291	70	19	2	1		9	1	1			2	
1926	569	491	78	26	5	1	1	10	1				1	
1927	518	404	108	36	9	1	8	21		2			1	
1928	616	509	107	45	10	2	1	31	1			1		
1929	1410	1323	77	23	8	5	1	6					3	
1930	1508	1375	133	59	8	6	4	7	1	2	23		7	
1931	1366	1216	150	63	16	3	1	3		1	42		1	
1932	972	808	164	117	14	10	1	24	3	3	38		14	1
1933	888	772	116	77	13	3	3	22	11	13	19		5	
1934	992	904	88	47	14	2	5	16		2	6		3	
1935	978	877	101	40	13	2	1	14	2		7			
1936	1114	1015	99	31	15	2		9	1	1	6			
1937	1226	1126	100	53	22	1	1	9		2	8		5	
TOTALS	13331	11785	1546	703	168	43	36	209	23	27	152	1	49	1

* Arson Squad organized October 25, 1921.

Seventeen-Year Comparison of Fires Investigated—Arrests and Disposition

FIRST ANNUAL ROLL CALL
Shows the Elkhart Mystery
FOG NOZZLE
has been accepted
FROM
COAST TO COAST

PATENT NUMBER 2,089,304

ROLL CALL

ALABAMA
Andalusia
Decatur
Dora
Enterprise
Eufaula
Fayette
Florala
Greenville
Haleyville
Hartford
Huntsville
Livingston
Luverne
Opelika
Opp
Sampson
Scottsboro
Selma
Tarrant City
Tuscaloosa

ARIZONA
Clarkdale
McNary
Mesa
Prescott

CALIFORNIA
Alturas
Bishop
Carmel by the Sea
Chico
Corcoran
Dinuba
Ferndale
And Others

CONNECTICUT
Ansonia
Bristol
Clinton
Cos Cob
Glenbrook
Madison
Naugatuck
New Haven
Stamford
Stratford
Terryville
Thomaston
Thompsonville
Trumbull
West Hartford
Wethersfield
Willimantic

DELAWARE
Wilmington

FLORIDA
Clearwater
Cocoa
Daytona Beach
Deland
Gainesville
Haines City
Jacksonville
Lakeland
Miami Beach
Ocala
Orlando
Palatka
Sanford
Vera Beach
Winter Garden

GEORGIA
Covington
Dalton
Fort Valley
LaGrange
Quitman
Rome
Taccoa
Thomasville
West Point
Winder

IDAHO
Boise
Bonners Ferry
Gooding
Idaho Falls
Lewiston
Nampa
Rexburg
Weiser
And Others

ILLINOIS
Alton
Abingdon
Atlanta
Bartlett
Belleville
Belvidere
Bridgeport
Brimfield
Canton
Centralia
And Others

INDIANA
Alexandria
Anderson
Argos
Bluffton
Connersville
Corydon
Crawfordsville
Elkhart
Elwood
Fort Wayne
Frankfort
And Others

IOWA
Albert City
Algona
Alta
Atlantic
Avoca
Battle Creek
Britt
Carroll
Cherokee
Clarion
Corning
Correctionville
And Others

KANSAS
Baxter Springs
Belleville
Caldwell
Caney
Coldwater
Concordia
And Others

KENTUCKY
Cynthiana
Hazel
Lexington
Shelbyville

LOUISIANA
Alexandria
Hammond
Jeanerette
New Orleans
Port Allen
Shreveport
Thibodaux

MAINE
Bridgton
Harrison
Houlton
Milford
Mount Vernon
Portland
Richmond
South Poland

MARYLAND
Cumberland
Frederick

MASS.
Abington
Acton
Athol
Attleboro
Bedford
Beverly
Billerica
Boston
Brewster
Bridgewater
And Others

MICHIGAN
Adrian
Allegan
Alpena
Ann Arbor
Bay City
Bellevue
Brighton
Charlotte
Dearborn
Detroit
Dowagiac
Ferndale
And Others

MINNESOTA
Alden
Amboy
Arlington
Blackduck
Blooming Prairie
Bricelyn
Brownton
Browndale
And Others

MISSISSIPPI
Forest
Port Gibson
Vicksburg

MISSOURI
Hayti
Kansas City
Kenneth
Marshall
Mexico
Poplar Bluffs
St. Louis
Wellston

MONTANA
Butte
Great Falls
Helena
Laurel

NEBRASKA
Arnold
Ashland
Bloomfield
Crawford
Deshler
Grand Island
Kearney
Lexington
Minden
Omaha
Palisade
Pierce

NEVADA
Battle Mountain
Lovelock
Minden

NEW HAMPSHIRE
Franklin
Manchester
Newmarket
Pittsfield
Somersworth

NEW JERSEY
Beach Haven
Bridgton
Egg Harbor
Haddonfield
Landisville
Linwood
Manasquan
Maple Shade
Mendham
Minotola
And Others

NEW MEXICO
Hobbs

NEW YORK
Alden
Alleghany
Andover
Arcade
Avoca
Avon
Barker
Blasdell
Bliss
Blossom
Bolivar
Buffalo
And Others

NORTH CAROLINA
Charlotte
Enka
Gastonia
Greensboro
Reidsville
Rocky Mount

NORTH DAKOTA
Bismarck
Grafton
Grand Forks
Valley City

OHIO
Akron
Aurora
Barberton
Bellevue
Canton
Cleveland
Dayton
Franklin

OKLAHOMA
Ada
Altus
Anadarko
Claremore
Clinton
And Others

OREGON
Albany
Ashland
Astoria
Florence
Forest Grove
Klamath Falls
And Others

PENNA
Abington
Allentown
Archibald
Ashley
Bala-Cynwyd
Beaver Falls
And Others

RHODE ISLAND
Cranston
Pascoag
Pawtucket
Warwick
Woonsocket

SOUTH CAROLINA
Newberry
Rock Hill

SOUTH DAKOTA
Rapid City
Sisseton

TENNESSEE
Chattanooga
Memphis
Nashville

TEXAS
Abilene
Amarillo
Arlington
Beaumont
And Others

UTAH
Logan
Ogden
Salt Lake City

VERMONT
Randolph

VIRGINIA
Cape Charles
Clifton Forge
Covington
And Others

WASHINGTON
Aberdeen
Anacortes
Arlington
And Others

W. VIRGINIA
Beckley
Charleston
Charlestown
Logan
Martinsburg

WISCONSIN
Beaver Dam
Beloit
Berlin
Bonduel
And Others

WYOMING
Pine Bluff

FOREIGN

ALASKA
Anchorage
Nome
Seward

ENGLAND
Winnington, Nortwich

CANADA
Amherst, Nova Scotia
Montreal
Transcona, Manitoba
Winnipeg

LARGE INDUSTRIALS
Anaconda Copper Mining Company
Inland Steel Company
Mount Vernon Car Mfg. Company
Pan-American Refining Corp.
Quaker State Oil Refinery
Southport Petroleum Company
Standard Oil Company of Indiana
Texas Company
Wadhams Oil Company

HERE IS WHY THEY BOUGHT!

- No Holes to Clog
- Engineered by Elkhart, "The Old Reliable"
- Positive nozzle control
- Instantaneous stream selection
- Rubber bumper protects barrel
- Leakproof packing, seepless shut-off
- No moving parts to jam

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Elkhart Brass Mfg. Co.
ELKHART, INDIANA

Ready FOR YOU NOW

M·S·A ONE-HOUR

OXYGEN BREATHING APPARATUS

Here is the answer to insistent demands of fire departments and industry for an oxygen apparatus combining wearing ease of the Lightweight Half-Hour type with respiratory protection for a full hour, even under the most strenuous working conditions. Retaining every tested feature of the famous Half-Hour unit, the new One-Hour Apparatus provides doubled capacity and perfect balance, with but slight increase in weight. Write for full details—and a ready demonstration!

MINE SAFETY APPLIANCES CO.
Braddock, Thomas and Meade Streets, Pittsburgh, Pa.
District Representatives in Principal Cities

DEMONSTRATION ON REQUEST

COMPLETELY INSTALLED
NO Chassis Change!

BARTON FIRE PUMPS

PLAN TO INCLUDE BETTER FIRE PROTECTION IN YOUR 1938 BUDGET . . . . .

Now is the time when most cities, towns and villages are considering 1938 expenditures—making up annual budgets. An ideal time for you to get money appropriated for better fire apparatus—before that money is spent for less important things.

And thousands of Chiefs have found it easy to sell the "powers that be" on Barton Fire Pumps. Nor is it hard to understand why, for Barton Pumps enable you to have the FINEST, MOST DEPENDABLE of fire-pumping equipment, YET SAVE YOUR COMMUNITY HUNDREDS OF DOLLARS IN FIRST COST.

Real Economy With BARTON Pumps

First, because of simplified design, a Barton Centrifugal Pump costs MUCH LESS than other type apparatus. Second, because of Front-Mounting, a special expensive fire truck is NOT REQUIRED. Any size Barton Pump can be used on a standard truck and completely installed WITHOUT A SINGLE CHASSIS CHANGE—total cost but a few dollars for labor.

How can we best help you present this wonderful economy story to your community? Write for literature explaining Barton Pumps. Or would you prefer to have our nearest representative call and talk to your people? No obligation, of course.

AMERICAN-MARSH PUMPS, INC.
Centrifugal, Turbine, Steam, and Power Pumps
BATTLE CREEK . . . . MICHIGAN

Paul J. Moore Dead

Paul J. Moore, former Chief of the Newark, N. J., Fire Department, and former Congressional Representative from the Eighth New Jersey District, died at a Newark hospital from the effects of a stroke. He was fifty-nine years old.

He was a member of the Fire Department for thirty-two years. He served in Congress for one term, 1927-1929 and lost by small margins, campaigns for re-election in 1928 and 1930. Politically, Mr. Moore was a Democrat

The Late Paul J. Moore
Taken when he was Chief of the Newark Fire Department.

and for many years was Chairman of the Essex County Democratic Committee.

He was a member of the Newark Fire Chiefs' Association, and the I. A. F. C. Chief Moore is survived by his widow, three sons, and two daughters.

Committee Meets to Arrange Baltimore Convention

The committee on the Maryland State Firemen's Association-Eastern Association Fire Chiefs Baltimore convention, held the regular meeting at Baltimore, January 14. The committee is arranging all details of the convention to be held here in June.

General Chairmen F. A. Clautice presided. Principal speakers of the evening were Chiefs Travers of Baltimore, Warr of the Baltimore Salvage Corps, Clark of Wayne, Pa., and B. H. Shipley, President of the Maryland State Firemen's Association.

Chief Travers assured the delegates that the convention would not be cramped from lack of funds. Chiefs Warr and Clark spoke on their efforts to bring a large number of Fire Department officials to the convention. They emphasized the value of having these expert fire fighters present to pass their knowledge on to others. Chief Shipley, and Chief Anthony Orban, Baltimore County Paid Department, also spoke briefly.

Walter Merryman, President of the Baltimore County Volunteer Firemen's Association also was present. The next meeting of the committee will be held on Feb. 11 at 8 p.m. at the Lord Baltimore Hotel.

OTIS SMITH.

Chief Herring Reports Lowest Loss

Chief Albert Herring, Murphysboro, Ill., reports for the past year, the lowest fire loss in the history of the Fire Department.

The report shows a fire loss per capita of 23.08 cents, and a loss per fire of $21.10. Not a single fire call was received during the months of January and June, 1937.

The department operates as three bureaus—Bureau of Fires, for the control and extinguishing of fires; Bureau of Fire Prevention, for prevention measures in the schools and homes, and inspections of fire hazards; Bureau of Public Relations, participation of the department in worthy town movements for progress and social enjoyment, charity, etc.

A Correction

In the article headed "Spending the Time Between Fires," appearing on pages 8 to 11, FIRE ENGINEERING, January, 1938, the name of the author was incorrectly spelled. It should have read: "By Deputy Chief Fire Marshal Anthony J. Mullaney."

Chief James N. Sullivan Dead

Following a long illness, Chief James N. Sullivan, Greenwich, Conn., Fire Department, died at Greenwich Hospital on February 6. Chief Sullivan was the second Greenwich paid Chief to die within the past seven months, Chief Isaac M. Hubbard having died in August, 1937. The late Chief Sullivan entered the hospital for treatment three months following his appointment as Chief.

A native of Brewster, N. Y., Chief Sullivan came to Greenwich in 1888, where he joined the volunteer Fire Department and established himself as a builder and carpenter. In 1914, after fifteen years of service, he was named Chief of the town's volunteer companies. He served a six-year term at that time and in 1926 was appointed for another six-year term, at the conclusion of which Isaac Hubbard was named to succeed him.

The late Chief Sullivan was vitally interested in the affairs of the town of Greenwich and at one time he was a Fire Commissioner and also a member of the police board and a member of the Board of Selectmen. Fraternally he was a charter member and past exalted ruler of the Greenwich Lodge of Elks; Treasurer of Court General Putnam, Foresters of America; a member of the Independent Order of Red Men and a director of the local Knights of Columbus. He was also a member of the Connecticut State Firemen's Association, the Fairfield County Fire Chiefs' Emergency Plan and the Fire Chiefs' Emergency Plan of Westchester County, N. Y., serving as President, in 1933, of the latter organization, the only Connecticut Chief to serve in that capacity.

Chief Sullivan is survived by his daughter, Dorothy. Town officials and members of the Greenwich Fire Department attended the funeral services from his home on February 9. Interment was in Saint Mary's Cemetery, Ridgefield.

THOMAS F. MAGNER.

Reilly Fire Commissioner of Boston

William Arthur Reilly took office as Fire Commissioner of the city of Boston on January 4, 1938.

He was born in Boston on March 6, 1903, and attended the Lewis Grammar School in Roxbury, the High School of Commerce, and Boston College High School. He graduated from Boston College in the class of 1925.

In 1930 he was elected to the Boston School Committee and served as Chairman in 1933 and 1934. He served on the Finance Commission in 1936. He is a

Commissioner W. A. Reilly

member of Jamaica Council, Knights of Columbus, and of the Boston College Alumni Association. He is married and has two children.

There were a number of handsome floral tributes in the commissioner's office at headquarters, 60 Bristol Street, on the day the new head arrived to assume his duties. A host of friends called to pay their respects and to wish him success. Mr. Reilly is the youngest man who has ever held the post of Fire Commissioner in Boston.

HARRY BELKNAP.

George Crouse Dead

George Crouse, who sold fire apparatus for The Seagrave Corporation, Columbus, Ohio, from 1902 to 1930, died at his home in Westerville, Ohio, at the age of eighty-six. At the time of retirement in 1930, he was believed to have been the oldest active fire apparatus salesman in the country.

In the early days, he covered practically the entire United States, selling Seagrave horse-drawn apparatus, and later motorized equipment.

Manufacturers' Announcements

Chief Carr With Ahrens-Fox

E. F. Carr has resigned as Assistant Chief of Chester, Pa., and has joined the sales force of the Ahrens-Fox Fire Engine Company. He will work out of the New York office, 17 East 42nd

E. F. Carr

Street, and his territory will include the northern part of New Jersey, and Orange and Rockland Counties in New York.

Fire Apparatus

An illustrated folder has been issued by the Ahrens-Fox Fire Engine Company, Cincinnati, Ohio, to present their series H and I fire apparatus.

Fire Hose Bulletin

A four-page illustrated folder has been released by the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J. It contains detailed description of the types of construction of Manhattan hose and helpful technical data.

Instructors Conference Held at Memphis

Twenty-seven states were represented at the Fire Department Instructors Conference held at Memphis, Tenn., January 11 to 14. In all, 196 Chiefs, instructors and other Fire Department members registered.

The officers are John Touhey, Drillmaster, Chicago, President; C. O. Bonnelle, Drillmaster, Denver, Col., Vice-President; Roberts Tate, Drillmaster, Baltimore, Md., Second Vice-President; Fred Heisler, Director Technical Training, Stillwater, Okla., Counsellor; J. Ray Pence, Chief, Stillwater, Okla., Secretary-Treasurer.

Following is the program carried out at the conference:

Tuesday, January 11

8:00 a.m.—Registration.
9:00 a.m.—Address: "Training in the Fire Service"; Clarence Goldsmith, Assistant Chief Engineer, National Board of Fire Underwriters, Chicago.
Round Table: "College Courses in Firemanship"; Discussion Leaders — W. Fred Heisler, Director, School of Technical Training, Oklahoma A. & M. College, Stillwater; R. B. Criswell, Fire Service Extension Professor, College of Engineering, University of Maryland, College Park.
Address: "The Use of Motion Pictures in Firemen Training" (with pictures); Professor H. R. Brayton, Director, Texas Firemen's Training School, A. & M. College of Texas, College Station.

Afternoon Session, at the Drill Tower

2:00 p.m.—Evolutions Reviewed: "Hose"; Conducted by J. M. O'Brien, Assistant Chief, Fort Worth, Texas, (Large Town Methods); Elmer Dicke, Assistant Chief, Downers Grove, Illinois, (Small Town Methods).
Evolutions Reviewed: "Ladders"; Conducted by Capt. A. J. Schaefer, Drillmaster, Memphis, (Large Town Methods); Capt. William Ronnfeldt, Drillmaster, Grand Island, Nebraska, (Small Town Methods).
Evolutions Reviewed: "Minor Equipment and Rope"; Conducted by Capt. Humborg.

Wednesday, January 12

9:00 a.m.—Assembly: (Question Box). Richard E. Vernor, Chairman.
Address: "Air-Conditioning Problems"; Sydney V. James, Engineer, Casualty and Automotive Department, Underwriters Laboratories, Inc., Chicago.
Demonstration: "Fire Streams in Miniature"; R. B. Criswell.
Round Table: "The State Fire College"; Discussion Leaders—Lindon J. Murphy, Director, Iowa Firemen's Training School, Iowa State College, Ames—W. A. Knapp, Director, Indiana Fire School, Purdue University, Lafayette.
Round Table: "The Regional Fire School"; Discussion Leaders—Chief Lloyd Layman, Parkersburg, W. Va.—Harry J. Corcoran, Engineer, Iowa Insurance Service Bureau, Des Moines.
Round Table: "Progress in Vocational Education"; Discussion Leaders—J. W. Parry, Director, Vocational Education, University of Michigan, Ann Arbor—D. L. McElroy, Director, Fire Service Extension, University of West Virginia, Morgantown.
Address: "Rural Fire Protection"; Horatio Bond, Engineer, National Fire Protection Association.
Address and Demonstration: "Ladder Testing"; Clarence Goldsmith. (The Demonstration will be conducted at the Drill Tower.)
"Multiple Alarm Response"; Chief John H. Touhey, Director of Fire Instruction, Chicago.
"Multiple Hook-ups and Master Streams"; Harry J. Callahan, Chief of Training School, Detroit.
Round Table: Discussion Leader—Chief Harry K. Rogers, Fire Department Engineer, Western Actuarial Bureau, Chicago.
Building construction, automatic sprinklers
Traffic problems
Water supplies
Underground fires
Church fires (auditoriums, theatres, etc.)
Storage of oil, gasoline, cotton, etc.
Training and drillwork (officers school)
Uniform practices in department (standardized equipment)
Aerial ladders vs water towers (crow's nest)
Fog and vapor nozzles
Sound-wagons, amplifiers, etc.
Flood-lights, wagons, etc.
Air-compressors, wagons, etc.
Smoke ejectors
De-watering man-holes, basements, etc.
Disaster operations
Miscellaneous

Thursday, January 13

9:00 a.m.—Assembly: (Question Box). L. H. Provine, Director, Illinois State Fire College, Dean of School of Architecture, University of Illinois, Urbana, Session Chairman.
Round Table and Demonstration: "The Fire Department in Fire Prevention"; Discussion Leader—J. Burr Taylor, Fire Prevention Department, Western Actuarial Bureau, Chicago. Conference Secretary.
Address and Demonstration: "Instruments"; A. H. Gent, Engineer, Illinois Inspection Bureau, Chicago.
Round Table: "Quads"; Discussion Leader—S. G. Render, Assistant Chief, Louisville.
Round Table: "Small Lines"; Discussion Leaders—Charles O. Bonnelle, Assistant Chief and Drillmaster, Denver—A. H. Gent, Chicago.
Address and Demonstration: "Flameproofing Fabrics"; George H. Anderson, Assistant State Fire Marshal of Illinois, Springfield.
Address: "Fire Department Administration"; Ambrose Fuller, Consultant, American Municipal Association, Chicago.
Motion Picture: "Approved by the Underwriters" or "Testing for Safety at Underwriters' Laboratories, Inc."; through courtesy of A. R. Small, President of the Laboratories.

Afternoon Session, at the Drill Tower

2:00 p.m.—Evolutions Reviewed: "Salvage"; Conducted by Chief T. H. Pankey and Memphis Fire Patrol.
Evolutions Reviewed: "Combined Hose and Ladder"; Conducted by Chief Thomas J. Hardwick, Kansas City, (Large Town Methods); Chief J. Ray Pense, Stillwater, (Small Town Methods).
7:30 p.m.—International Association of Fire Department Instructors—Chief J. Ray Pence, Secretary.

Friday, January 14

9:00 a.m.—Assembly: (Question Box). Chief Harry K. Rogers, Session Chairman.
Report: "Bibliography Committee"; L. H. Provine, Committee Chairman.
Round Table: "Inspections by Fire Departments"; Discussion Leader—Frank Buckalew, Fire Marshal, Memphis Fire Department.
Concluding Round Table: Open for free discussion on any subjects not previously covered or not disposed of.

Chief Melendy Injured

Chief Albert C. Melendy, of Nashua, N. H., Secretary of the New Hampshire Fire Chiefs' Club, was removed in a serious condition to the Nashua Hospital, with two broken legs and other injuries, which he sustained when he was struck by an automobile. He had stepped into the street to direct operations at a recent fire in Nashua.

HARRY BELKNAP.

Chief V. C. Shepard Retires

Chief V. C. Shepard, a member of the Macon, Ga., Fire Department for twenty-five years, was retired at his own request. Guy Mosely, Assistant Chief, has been named Acting Chief.

The city has been making deep slashes in department budgets, and it is said

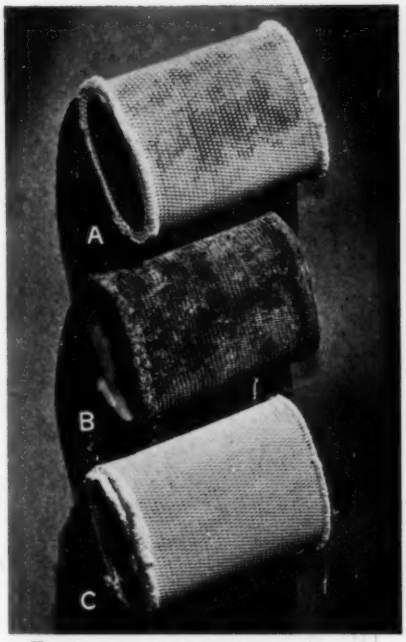
Ex-Chief V. C. Shepard

that the greatest slash was for the fire service. Last year the appropriation called for $158,005, and the recent amount was for $148,857.

NO SIGN OF MILDEW
AFTER BEING
PROVAR PROCESSED

★ Saturated with water and exposed for six months to warm, moist atmosphere, Republic PROVAR PROCESSED Fire Hose showed no signs of mildew, no discoloration, no loss of strength or quality. The PROVAR PROCESS is an exclusive method of treating fire hose for mildew protection—far superior to any previous effort by any other manufacturer.

The PROVAR PROCESS is permanent—will not wash out. It means longer life to your hose, greater economy, greater safety, and—the price is the same as regular hose!



A Not processed for mildew protection.
B Processed for mildew protection by a competitor.
C PROVAR PROCESSED Republic Fire Hose —no sign of mildew.

• • •

Unretouched photo showing results after samples were saturated with water and exposed to moist atmosphere for six months.

Republic **FIRE HOSE**

REPUBLIC RUBBER
Division of Lee Rubber and Tire Corporation
Youngstown, Ohio

ANOTHER CHAT WITH FIRE ENGINEERS ABOUT WATERFOG

IN last month's issue of Fire Engineering we discussed with you the FOGNOZL principle of fire extinguishment.

The response we received from interested engineers justifies this second chat. Some engineers are saving these discussions to add to their notes on the subject of fog.

Last month we called attention to the comparative efficiency of different degrees of broken-up water. We also discussed how the heat of the fire aids in bringing about its own destruction when Giswold FOGNOZLS are used.

We promised additional information. Another important factor in allowing fire to destroy itself in using fog is the minuteness of the fog-particles. Fog-particles must be fine enough to be partially suspended in the air like natural fog.

The reason for this is that the convecting air-currents of the fire pick up the light floating fog-particles and draw this humidity into the burning vapors. WATERFOG, as created with the Griswold FOGNOZLS, floats around corners into crevices, between partitions and seeks out places that straight streams do not reach.

Thus, the fire first draws the fog into the burning area and then its own heat expands the fog. The two processes of drawing in the fog and of turning it more humid are actions caused by the fire itself. But the fog must be of such fine texture that this condition is made possible. If it is not, little has been gained. Griswold FOGNOZLS break up water finer than any other device on the market, irrespective of pressure.

That brings us the reason for creating fog outside the nozzle. The water ejected from a Griswold FOGNOZL is still a straight stream at the point where it leaves the nozzle, and like any straight stream there are no separate drops of water breaking away from this stream. Pairs of these straight streams impinge themselves outside the FOGNOZL and completely crack themselves up into a fog. After this WATERFOG is once produced it does not touch any metal or object of any kind except the fire.

Our engineers learned that there are three fundamental ways to break up water. One, to pinch the water; two, to drive the water against an object; three, to impinge two streams of water against each other. Of these three ways only the latter produced a fog with the minimum of large drops or masses of water. The other processes are not efficient because the water touches metal either in the process of break-up or after it is broken. The result is that only the impinging process outside the nozzle produces a real WATERFOG. Patents, of course, were taken out to cover the basic points of their discoveries.

On certain types of fires it would be dangerous for the operator to attempt extinguishment with a spray or vapor in which there are large drops or masses of water.

Equally important is the matter of a solid or homogeneous mass of fog. This will be the basis of our discussion in the next issue of the Fire Engineering. We will also discuss why it is necessary to have so many (14 or more) different kinds of FOGNOZLS in order to efficiently fight fires with this method and how WATERFOG extinguishment aids in detecting arson fires.

In the meantime, we will, upon your request, send you, without any obligation, "The Story of Man-Made Fog."

FLASH! **Griswold FOGNOZLS have been approved by the United States Department of Commerce for marine use. We are the only manufacturer that received approval of two nozzles.**

THE FOG NOZZLE CO.

1520 E. SLAUSON AVE. LOS ANGELES, CALIF.

AFTER all, a good badge is a sensible investment. Not everyone can wear a fireman's emblem of service. You men who have devoted your lives to saving life and property should be proud of your badge.

You will be if you wear a BRAXMAR BADGE. Over fifty-five years of experience goes into every badge you buy.

Catalog on request.

C. G. BRAXMAR CO., 242 West 55th Street, New York

BRAXMAR BADGES

Standard for Over Fifty-Eight Years

WHAT SOME PROMINENT FIRE CHIEFS SAY ABOUT... LIN-LINED FIRE HOSE

And a lot more can be said about LIN-LINED Fire Hose. It has many distinct advantages over other types of hose . . . lighter in weight, it is so much easier to handle and more of it can be carried on the wagons. The Portland, Ore., Fire Department tried 200 ft. of LIN-LINED Fire Hose and the result was repeat orders to the extent of 4,600 feet.

•

Let us send more detailed information on LIN-LINED Fire Hose—you will find this more than just interesting. Write today.

These are excerpts from discussions at the last Annual Convention of the Pacific Coast Association of Fire Chiefs.

"In usual operations we found, we were convinced that the leakage in the linen hose was negligible — it does not amount to anything."

"It is wonderful stuff to work with."

"We took a length of hose and saturated it thoroughly with water and put it in a damp place and left it for two months . . .; and found absolutely no mildew."

"The men like the hose especially for the ease with which it is handled. . . ."

"It is lighter and easier to get around on rough ground and bad places. . . ."

"We also find that it will stand more abuse . . . we even took a tractor and ran over it with apparently no damage."

"We could load a lot more of it . . . twice as much as other hose."

AMERICAN FIRE HOSE COMPANY
South and 6th Streets — Passaic, N. J.

FREE TO FIRE CHIEFS

Fire chiefs who are seeking increased appropriations for more fire alarm boxes or fire fighting equipment may help their cause by furnishing the Mayor of their city a copy of

"INFLATION AND FIRE CHIEFS"

by ROGER W. BABSON as it appeared in FIRE ENGINEERING for February, 1937. Copies will be sent free to any chief who writes:

BABSON'S STATISTICAL ORGANIZATION, INC.
By ROGER W. BABSON, *President*
Babson Park, Mass.

REDUCE WATER DAMAGE & INSURANCE RATES,

Shuredry SALVAGE COVERS

100% Protection with Shuredry Salvage Covers

Read what Chief Powell says:

. . . At a recent house fire of 14 rooms where the entire roof was burned off, with a $1,500.00 loss to house, our Shuredry Salvage Covers gave 100% protection to the bedrooms directly under the fire besides to all other furniture in the home. Not one cent was paid for water damage to contents.

No fire department is complete without a good supply of salvage covers, and firemen trained how to use them properly. We can always depend on our Shuredry salvage covers and are only too glad to recommend them.

Yours very truly,
***R. A. POWELL*, Chief**
Pierre Fire Dept.
Pierre, South Dakota

Fulton Bag & Cotton Mills
Manufacturers Since 1870
ATLANTA ST. LOUIS DALLAS
MINNEAPOLIS BROOKLYN NEW ORLEANS KANSAS CITY, KAN.

FALSE ALARMS

NO TIME LOST

The Chief has a young daughter who, while accomplished in several ways, is far from attractive. At the department or company social functions, the men felt that it was their duty to be nice to her because of her father's position.

It was the day after the department ball. Two firemen were discussing their experiences of the night before.

Asked one, "When you asked her to dance did she accept quickly?"

"Did she? Why, she was on my feet in an instant."

Marriage is like the telephone. One doesn't always get the party wanted.

THE HANDICAP

He had been transferred from Station 4 to a house in the residential district. In his quarters he found that the men conducted a kitchen at which each took turns in operating.

After the one in charge had served the newcomer his seventh cup of coffee, he remarked:

"You must be very fond of coffee."

Pausing just long enough to get his breath, he said:

"You bet, or I wouldn't be drinking so much water to get a little."

After all, birth control is merely evading the issue.

JUST A POINT OF VIEW

When the conductor came around in the train to collect fares, a woman sitting with her son said:

"One fare for me and a half fare for the boy."

The conductor looked at the boy for a few moments and said, "But lady, he has on long pants."

This did not stump the mother.

"All right if that's the way you figure. Full fare for the boy and half fare for me."

Nowadays the midnight oil is burned in the transmission gear instead of the lamp.

QUITE BUSY

While waiting for a phone booth to call up his office, an inspector heard the following:

"I know that I haven't seen you for ages, but, my dear, I've been so busy with one thing and another. I've just had my teeth taken out, and a gas stove put in—."

His best friends wouldn't tell him, so he flunked his exam.

BACK TO THE SOIL

Fire apparatus salesmen, in the course of their work, manage to get into the small hamlets as well as the large cities. One tells the following story.

He was waiting at the railroad station of a very small town, for a train to take him to the city. Two middle aged men, evidently farmers, were waiting for the same train, to load some cases of produce that they had.

As they were waiting, a fashionably dressed woman went by, complete with rouge, lipstick and powder. The two men seemed amazed.

Said one, "Man, what do you make of that."

The other, endowed with that back-to-the-soil philosophy, coolly remarked:

"It's a very poor land that needs that much top dressing."

IMPROPER

The city had been trying for some time to get federal approval for the construction of a fire station and improvements to the fire alarm system. After waiting for many weeks for a reply to its application, the city decided to send a representative to the state house to talk things over with the state administrator.

As the man was getting his ticket, which the railroad agent informed him was the last berth in the train, an old woman next in line asked would he mind giving her his ticket. She told the story of having to rush on to a daughter who was very sick. The man gave up his reservation.

He wired the state official with whom he had an appointment:

"Not arriving on train as planned. Stop. Just gave berth to an old lady."

Then there was Jones, the new father of twins. It was not unexpected. He married a telephone operator, and of course, she gave him the wrong number.

OBSERVATIONS ~ 1938 ~
A GREAT DANE AND A POODLE
SALLY RAND AND PAL ~ FIRE DEPT. MASCOTS MARTINSVILLE, IND.
AT HENDERSON, KENTUCKY THE FIRE LADDIES STRIP AND PREPARE THEIR OWN CHEWIN' AND SMOKIN'!
SHELBYVILLE, IND. STILL HAS OLD FIRE HELMETS LIKE THIS ONE.
IN MATTOON, ILLINOIS ALL FIRE APPARATUS IS PAINTED AND LETTERED BY ONE OF THE CAPTAINS. CHIEF WEAVER IS, HIMSELF, AN ARTIST!
AND—
CHIEF "JACK" McCARTHY, THE VETERAN SMOKE EATER, CORNING, N.Y. RAISES GUPPIES. HE HAS A COPPER PACHYDERM MADE WITH HIS OWN HANDS.
AT RICHMOND, INDIANA, THE BOYS MAKE BUTCHER KNIVES AND "TOAD STABBERS" - ALSO F.D. EMBLEMS
ART ESPEY AT TERRE HAUTE, IND. 2/5/38

CLASSIFIED ADVERTISING

Bids Wanted, For Sale and Help Wanted $5 per inch. Position Wanted, $2.50 per inch.

For Sale

Brockway 3-tank Chemical Fire Engine. Reo 300 Gallon Triple Combination Pumper. Also Mack City Service Hook and Ladder Truck. Each apparatus completely equipped. Write New Jersey Fire Equipment Co., Dunellen, N. J.

For Sale

One 1921 Seagrave Pumper 750 GPM, complete with standard equipment (no hose) Sewell cushion wheels and tires. In good operating condition, will demonstrate. This truck has been replaced by a larger unit. Wire or write N. P. Neff, City Clerk, 17150 Maumee Avenue, City of Grosse Pointe, Mich.

CONVENTION DATES

Feb. 14—LITCHFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Washington, Conn. Secretary, Captain Wesley Billings, Thomaston, Conn.

Feb. 15—NEW HAVEN COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, West Haven, Conn. Secretary, Chief Edward Pracny, Wolcott, Conn.

Feb. 16—FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY. Regular Meeting, Elmsford, N. Y. Secretary, Captain Howard Geer, Fire Headquarters, Rye, N. Y.

Feb. 17—CONNECTICUT MUNICIPAL SIGNAL ASSOCIATION. Next Meeting, New Haven, Conn. Secretary-Treasurer, Supt. Leon Toczko, New Britain, Conn.

Feb. 17—ORANGE COUNTY ASSOCIATION OF FIRE CHIEFS. Next Meeting, Buena Park, Cal. Secretary, Percy Owen, Buena Park.

Feb. 23—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Norwalk, Conn. Secretary, Captain John Moehring, Toms Road, Stamford, Conn.

March 14—LITCHFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Watertown, Conn. Secretary, Captain Wesley Billings, Thomaston, Conn.

March 16—FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY. Regular Meeting, North Tarrytown, N. Y. Secretary, Captain Howard Geer, Fire Headquarters, Rye, N. Y.

March 23—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Trumbull, Conn. Secretary, Captain John Moehring, Toms Road, Stamford, Conn.

April 12—EASTERN NORTH CAROLINA FIREMEN'S ASSOCIATION. Next Meeting, Kingston, N. C. Secretary-Treasurer, Stamey Davis, Morehead City, N. C.

April 13—NASSAU COUNTY FIREMEN'S ASSOCIATION. Annual Meeting, Headquarters, Lawrence Cedarhurst Fire Department, Lawrence, L. I., N. Y. Secretary, James McInnes, Jr., Syosset, L. I., N. Y.

April 18-20—FLORIDA STATE FIREMEN'S ASSOCIATION. 13th Annual Convention, Fort Lauderdale, Fla. Secretary, F. C. Pfaender, Chattahoochee, Fla.

April 20—FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY. Regular Meeting, West Harrison, N. Y. Secretary, Captain Howard Geer, Fire Headquarters, Rye, N. Y.

April 27—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Darien, Conn. Secretary, Captain John Moehring, Toms Road, Stamford, Conn.

May—OHIO FIRE SCHOOL. 9th Annual School, actual dates to be set later. Director, K. W. Stinson, Ohio State University, Columbus, Ohio.

May 4-6—GEORGIA STATE FIRE COLLEGE. 4th Annual College, Atlanta, Ga., Director, Fire College, Harry Phillips, 166 Alabama St., Atlanta.

May 16-18—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 16th Annual Convention and 8th Annual Fire School, Carlsbad, N. M. Secretary-Treasurer, Theodore A. Rosenwald, P. O. Box 732, Albuquerque, N. M.

May 16-18—OKLAHOMA STATE FIREMEN'S ASSOCIATION. 44th Annual Convention, Muskogee, Okla. Secretary-Treasurer, Charles Slemp, 1701 Northeast 63rd Street, Oklahoma City, Okla.

May 23—IOWA FIRE CHIEFS' ASSOCIATION. Annual Meeting, Ames, Ia. Secretary-Treasurer, L. R. Morris, Ames, Ia.

May 25-28—IOWA SHORT COURSE FOR FIREMEN. Annual State Fire School, Iowa State College, Ames. Director, Lindon J. Murphy, Iowa State College.

May 30-June 3—SOUTH DAKOTA FIREMEN'S ASSOCIATION. 54th Annual Convention and Fire School, Mobridge, S. D. Secretary, M. C. Sullivan, Parkston, S. D.

June—NEVADA STATE FIREMEN'S ASSOCIATION. Annual Convention, Elko, Nev. (Exact date to be announced later.) Secretary, E. R. Simms, Sparks, Nev.

June—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. 33rd Annual Convention, Charleston, S. C. (Exact date to be decided later). Secretary-Treasurer, Paul E. Wilburn, Union, S. C.

June 13-15—MINNESOTA STATE FIRE DEPARTMENT ASSOCIATION. 66th Annual Convention, Wadena, Minn. Secretary, Fred Pfaender, New Ulm, Minn.

June 14-15—NORTH DAKOTA FIREMEN'S ASSOCIATION. 54th Annual Convention, Harvey, N. D. Secretary, H. R. Handtmann, Fargo, N. D.

June 14-16—STATE FIREMEN'S AND FIRE MARSHALS' ASSOCIATION OF TEXAS. 62nd Annual Convention, Amarillo, Tex. Secretary-Treasurer, Olin Culberson, Edna, Tex.

June—14-17—FIRE COLLEGE OF ILLINOIS. 14th Annual College, University of Illinois, Urbana. Director, L. H. Provine, University of Illinois.

June 15—NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION. 65th Annual Convention, Napoleon, Ohio. Secretary, J. W. Gardner, Ashland, Ohio.

June 15-17—MARYLAND STATE FIREMEN'S ASSOCIATION. 46th Annual Convention, Baltimore, Md. Secretary, George R. Lindsay, Hagerstown, Md.

June 15-18—WASHINGTON STATE FIRE CHIEFS' ASSOCIATION, STATE FIREMEN'S ASSOCIATION and STATE FIRE SCHOOL. Chiefs, 6th and Firemen's, 16th Annual Convention and 7th Annual Fire School, Wenatchee, Wash. (With a possibility of change of date to a week later.) Secretary, Chiefs, W. A. Groce, 716 Mohawk Bldg., Spokane; Firemen, Lyle I. Ficklin, Kalama, Wash.

June 16-18—EASTERN ASSOCIATION OF FIRE CHIEFS. 11th Annual Convention, Baltimore, Md. Secretary, Chief Charles E. Clark, P. O. Box 217, Wayne, Pa.

June 18—NASSAU COUNTY FIREMEN'S ASSOCIATION. 32nd Annual Parade and Tournament, West Hempstead, L. I., N. Y. Secretary, James McInnes, Jr., Syosset, L. I., N. Y.

June 21-22—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. 4th Annual Convention, Boulder, Col. Secretary-Treasurer, Chief Ray Tiller, Waterloo, Ia.

June 21-23—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 16th Annual Convention, Hotel Vermont (Exhibits, Municipal Auditorium), Burlington, Vt. Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass.

June 22-25—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 49th Annual Convention, Hudson, N. Y. Secretary, Chief Chris W. Noll, Poughkeepsie, N. Y.

June 29—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN—Regular Meeting, Redding, Conn. Secretary, Captain John Moehring, Toms Road, Stamford, Conn.

July—WEST VIRGINIA FIRE CHIEFS' ASSOCIATION. 7th Annual Convention, Morgantown, W. Va. Secretary-Treasurer, Roy B. Lister, Nutter Fort, W. Va.

August—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 55th Annual Convention, Milford, Conn. (Exact date to be decided later.) Secretary, D. W. Harford, 10 Chestnut St., South Norwalk, Conn.

August—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. 51st Annual Convention, New Bern, N. C. Secretary, John Miller, Concord, N. C.

August—VERMONT STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Poultney, Vt. (Exact date to be decided later.) Secretary-Treasurer, W. R. Adams, Vergennes, Vt.

Aug. 2-4—WISCONSIN PAID FIREMEN'S ASSOCIATION. 31st Annual Convention, Eau Claire, Wis. Secretary-Treasurer, George Johnson, 1609 West Boulevard, Racine, Wis.

Aug. 8-12—PROVINCE OF QUEBEC POLICE AND FIRE CHIEFS' ASSOCIATION. 6th Annual Convention, Sherbrooke, Que. Hon. Secretary-Treasurer, Chief Robert Harrington, Fire Dept., McColl-Frontenac Oil Co., Ltd. Suite 8, Hotel Windsor, Montreal, Que.

Aug. 9-10—VIRGINIA FIRE CHIEFS' ASSOCIATION. 10th Annual Convention, Luray, Va., Secretary-Treasurer, E. H. Rouse, Orange, Va.

Aug. 9-12—VIRGINIA STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Luray, Va. Secretary, O. W. Dabney, Staunton, Va.

Aug. 16-19—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. 66th Annual Convention, Saranac Lake, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.

Aug. 29—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 45th Annual Convention, Salt Lake City, Utah, week of Aug. 29 (Tentative date.) Secretary, A. J. Baker, Lewiston, Mont.

Aug. 29-Sept. 3—INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS. 14th Annual Convention, Atlanta-Biltmore Hotel, Atlanta, Ga. Secretary-Treasurer, George J. Richardson, A. F. of L. Bldg., Washington, D.C.

September—OREGON FIRE CHIEFS' ASSOCIATION. Annual Convention, Pendleton, Ore. (At time of Round Up Week—Date not set.) Secretary, Thomas Coates, Tillamook, Ore.

Sept. 7-8—DELAWARE VOLUNTEER FIREMEN'S ASSOCIATION. 18th Annual Convention, Newark, Del. Secretary, Warren W. Pettyjohn, Dover, Del.

Sept. 12-15—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. 43rd Annual Convention, Lord Baltimore Hotel, Baltimore, Md. Secretary, Irvin Shulsinger, 7 East 42nd St., New York City.

Sept. 14-15—MISSOURI ASSOCIATION OF FIRE FIGHTERS. 13th Annual Convention, Trenton, Mo. Secretary-Treasurer, M. J. Mulvoy, 3500 South Grand Blvd., St. Louis, Mo.

Sept. 15-17—INTERNATIONAL ASSOCIATION OF POLICE AND FIRE SURGEONS. Annual Convention, Atlantic City, N. J. Secretary, Dr. Harry M. Archer, 47 West 85th St., New York City.

Sept. 20-21—IOWA FIREMEN'S ASSOCIATION. 61st Annual Convention, Belle Plaine, Ia. Secretary-Treasurer, Paul A. Soener, Independence, Ia.

Sept. 23-24—NEW JERSEY STATE FIREMEN'S ASSOCIATION and NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. 61st Annual Convention, Atlantic City, N. J. Secretary, Firemen's Association, Evan F. Benners, 602 Chamber of Commerce Bldg., Newark, N. J., Secretary, Chiefs' Association, Fred A. Trowbridge, Morristown, N. J.

Sept. 26-29—CALIFORNIA STATE FIREMEN'S ASSOCIATION. 16th Annual Convention, Santa Barbara, Cal. Secretary-Treasurer, Harry E. Strasser, P. O. Box 506, San Diego, Cal.

Oct. 4-6—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 59th Annual Convention, Lebanon, Pa. Secretary, Chief Charles E. Clark, P. O. Box 217, Wayne, Pa.

Oct. 18-20—ILLINOIS FIREMEN'S ASSOCIATION. 51st Annual Convention, Père Marquette Hotel, Peoria, Ill. Secretary, Asst. Chief Roy W. Alsip, Champaign, Ill., or Chief Frank Hazzard, Peoria.

Oct. 18-20—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 57th Annual Convention, Fremont, Neb. Secretary-Treasurer, Louis A. Novak, Room 5, Koehn Bldg., Norfolk, Neb.

Oct. 19—FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY. Regular Meeting, Halstead Manor Fire House, Mamaroneck, N. Y. Secretary, Captain Howard Geer, Fire Headquarters, Rye, N. Y.

Oct. 25-28—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 66th Annual Conference, New Orleans, La. Secretary-Treasurer, Ex-Chief James J. Mulcahey, 16 Franklin Ave., Yonkers, N. Y. Chairman, Exhibits, Chief James T. Keegan, Salvage Corps, 227 Washington St., Newark, N. J.

Chief S. L. Dill Honored

Sam L. Dill, III, Chief of the New Bern Fire Department, is the new President of the Eastern North Carolina Firemen's Association, named at the quarterly meeting in Washington, N. C. His election was unanimous by the 300 firemen in attendance. He will succeed Vernon Guthie, Morehead City.

The next meeting of the association will be held on the second Tuesday in April at Kinston, N. C.

Other new officers are George E. Summerlin of Mount Olive, Vice President; W. H. Gray, Robersonville, Statistician, and Stamey Davis, Morehead City, Secretary-Treasurer.

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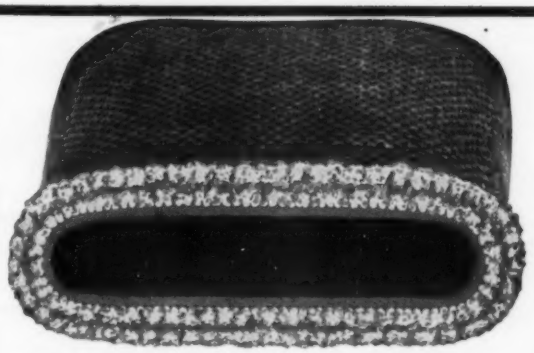

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FIG. 948 FOG DEVELOPING DEVICE

With the Buckeye Fog Developing Device (Fig. 948), which will fit your present shut-off nozzle, you can either [1] throw a straight, solid stream, [2] throw a straight, solid stream with an effective, protective water curtain, or [3] produce a smothering fog in an instant. This latter is done by merely closing the shut-off and opening the Fog Developing Device by giving it a slight turn.

Thus you are ready to meet all emergencies or sudden explosions. You can have the kind of stream you need the instant the need arises.

The Buckeye Fog Tip (Fig. 946) can be carried in the fireman's pocket. It quickly converts any shut-off into an efficient fog nozzle. If you are using Detroit Type Tips the addition of this Buckeye Fog Tip makes it an efficient fog nozzle also.

FIG. 946 FOG TIP ASSEMBLED ON SHUT-OFF NOZZLE

Write for complete details on these fog nozzles or any other Buckeye fire fighting equipment, consisting of warning whistles, Roto-Rays, Moto-Rays and Expanders.

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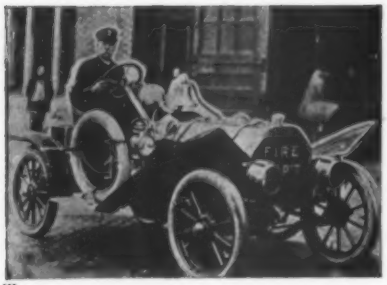

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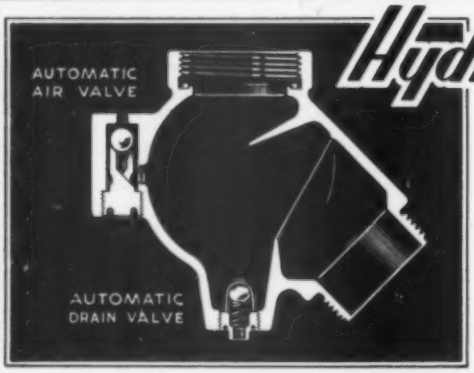

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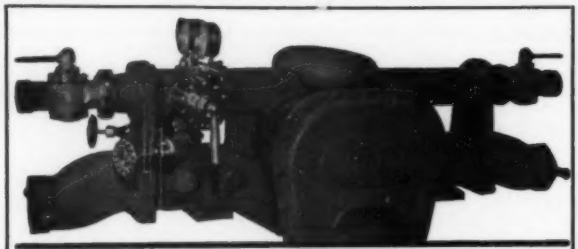

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FLEMING DESCRIBES CHEMICAL HAZARDS AT ELIZABETH MEETING OF N. J. CHIEFS

Quarterly Meeting of State Association Devoted to Talks on Traffic, School and Industrial Conditions—Madison Next Host

THE school program started by the New Jersey State Fire Chiefs' Association is the most progressive of any started, and is now being used all over the world.

This information was revealed by T. Alfred Fleming, Chief, Department of Conservation, National Board of Fire Underwriters, in his talk before the New Jersey State Fire Chiefs' Association, at a quarterly meeting held at the Elks' Club, Elizabeth, N. J., on January 27.

The visitors were welcomed by Mayor Joseph A. Brophy, Fire Commissioner Wagner, and others.

Entering a Chemical Age

In his talk, Mr. Fleming pointed out that civilization is emerging from an electrical age and is entering a chemical age. The last ten or twenty years have seen an entire change of the industrial picture.

He told of the school building disaster in Texas where seven oil wells were flowing in the school yard. Although many causes have been stated, the facts show that there was a low part of the basement that was not ventilated. Into this low spot seeped gas fumes, which collected and remained there. Just prior to the explosion which wrecked the school, there was a large drop in barometric pressure, which brought about the proper mixture of gas and air for the explosion. The necessary spark was provided by the manual training instructor, who pulled a switch to stop the machines at the end of the class period.

He also told of conditions in Louisiana, where there was an explosion of butane gas, and of a gasoline tank leak in another city which caused fumes to seep into the basement of a school and a department store.

At Toronto, Chief Sinclair and his men experienced a condition at a fire which produced explosions when water struck a fire. The plant contained metallic sodium and this was the direct cause of the hospitalization of several firemen.

Static Electricity a Major Hazard

Mr. Fleming told of many fires caused by static electricity, and new chemical substances introduced in industry. He pleaded for closer cooperation between industry and the Fire Department, so that the department would know of hazards to be met, if called upon to fight a fire at such plants. He urged that as fast as new chemicals and processes were developed, the Chief should be told of them, so that he and his men would be safeguarded in case of fire, and fire hazards and conditions could be alleviated.

Chief William H. Kenah, Elizabeth, announced that a training school for firemen was being formed in his city.

At the luncheon, groups from the public schools of the city presented a number of descriptive and amusing dances.

The afternoon session opened with a talk by George W. Ziegler, Chief Inspector, Motor Vehicle Department of the state. He said that his department was charged with the enforcement of traffic laws, examining the application of drivers' licenses, and the patrol of highways. Since the patrol cars were equipped with hand fire extinguishers, and since the men have extinguished many fires in vehicles and even homes, he felt sure that he could make the claim that he was in command of the largest Fire Department in the state.

In 1937, there were more than 40,000 persons killed in the United States from highway accidents and more than 1,000,000 persons were injured.

The gasoline tank mounted on the outside of the car is a feature that is responsible for many fires, resulting from accidents. These tanks have been sideswiped and ruptured in collisions because of the exposed, unguarded installation.

Volunteers on Highways

Volunteer firemen, he said, generally believe that drivers of fire apparatus have the complete right of way going to a fire. He cautioned the men, for while the state considered fire apparatus as an emergency vehicle and gave it the right to pass through a red traffic light, it holds that the driver of fire apparatus is not relieved of responsibility of accidents caused through the exercise of his taking the right of way. Drivers have a false sense of security because of the siren. Mr. Ziegler said that the false sense of security was of greater danger than the risk encountered in Fire Department work. Sirens should not be used when returning from a fire, although the locomotive bell may be used.

He was asked many questions by the men present. In answer to one question, he replied that the volunteer firemen cannot equip their private cars with sirens or red lights or both. Such rights were reserved for emergency vehicles of municipalities. However, recently, approval has been given for a special blue light to be mounted on the front of the machine not more than three feet from the ground, and minus a reflector so that it will be impossible for the light to throw a beam. Such a light may be used when responding to an alarm.

This talk excited general discussion, and it was only through the intervention of President Charles Greenfield that a halt was called to the questions asked the speaker.

In common with the meeting plan of the association, there was a round table discussion of problems presented by members.

F. W. Sibley, representing the Bussman Fuse Company, St. Louis, Mo., had an exhibit arranged and the projection of motion pictures showing the company's new type fuse. He also described its operation.

The next meeting of the association will be held in Madison some time in the spring.

Chief Brookins Honored

At a testimonial dinner attended by two hundred friends of Chief Louis C. Brookins, of Norwich, N. Y., he was presented with a diamond ring and an easy chair, to mark his forty years of meritorious service in the department. The chair was the gift of the Central New York Firemen's Association, while the ring was the gift of his local friends.

Chief Brookins became a fireman in 1898, when he joined the Ontario Hose Company. He was elected First Assistant Chief in 1906 and Chief in 1913. He has been elected Chief successively, year after year. He was state Vice-President of the I.A.F.C., in 1936. He is also a member of the Chenango County Firemen's Association, and the Cortland and the Madison County Firemen's Associations.

Chief Louis C. Brookins

Rhode Island Chiefs Hold Annual Meeting

The annual meeting of the Fire Chiefs' Club of Rhode Island was held in Warwick, R. I., on January 13. The election resulted as follows:

President—State Fire Marshal Frank Charlesworth.
First Vice-President—Chief Augustin J. Cote, Woonsocket.
Second Vice-President—Thomas V. Daley, Pascoag.
Secretary—Ex-Chief A. Robert Black, 71 Wellesley Avenue, North Providence.
Treasurer—Ex-Chief Arthur J. Billings, Norwood.
Auditing Committee—Ex-Chiefs Earle H. Batchelder, Centredale; John J. Reardon, Bayside, and Fred A. Smith, Greenwood.
Sergeant-at-Arms—Willard L. Taylor.
Chaplain—The Rev. Norris T. Morton, Providence.
Delegate to Rhode Island State Firemen's League—Ex-Deputy Chief David A. Bigney, Providence; Alternate Delegate, Chief Lionel P. Gareau, West Norwich.

It was voted to have a banquet at the next meeting, when the officers will be installed.

A. ROBERT BLACK.

N. C. Firemen to Meet in August

The New Bern Volunteer Fire Department is now making plans for the annual convention of the North Carolina State Firemen's Association, to be held in New Bern in August. About 2,000 visiting firemen are expected.

Major Albert Willis is formulating plans now for a parade to be held in conjunction with the firemen's convention. Prizes will be offered for various types of floats in the parade.

D. G. Spencer

Westchester Chiefs Discuss Refrigeration Hazards

The principal speaker at the regular monthly meeting of the Fire Chiefs Emergency Plan of Westchester County, which was held at the house of the Riverview Manor Hose Company, Hastings-on-Hudson, N. Y., on the evening of Wednesday, January 19, was Chief F. X. Murray, Teaneck, N. J., Fire Department. Chief Murray spoke on the subject of "Refrigeration and Refrigerant Gases."

The Plan was welcomed by Fire Commissioner Earl Krows and later by Mayor Steinsnider, of Hastings. A letter was read from William Paul Babcock, Nyack, urging that the Plan endorse a bill to be introduced in the New York State Legislature regulating the sale and use of fireworks. The letter and accompanying copy of the proposed bill were referred to the Legislative Committee for action.

The Secretary was instructed to send a letter of sympathy to Chief Outhouse, Ossining, who is ill. There were 150 present, one of the largest meetings the Plan has held.

Captain Howson reported, for his committee, that they had conferred with Commissioner Reynolds, of the parkway system, in regard to signs to be placed on the various telephone stands on parkways. It is proposed to place these signs, so that in case of fire in a car, the operator will know how to send an alarm to the nearest Fire Department. Later, Commissioner Reynolds came in and endorsed the plan for the signs. Chief Dougherty, of the committee, also spoke, pointing out that, of all of the Fire Departments along the various parkways in Westchester, not one had either a cutting outfit or an hydraulic jack. He suggested that such devices should be added, as they would be badly needed in case of a parkway accident.

Chief John Brennan, Pelham Manor, then introduced Chief Murray, who spoke at length on his subject and also illustrated it with lantern slides. He described the various types of refrigerant gases in use and their hazards. One of the most dangerous systems, from a firemanic point of view, is the multiple set up, in which all of the refrigerators in an apartment are fed by a single apparatus in the basement. He cited cases in which firemen had been overcome by the escaping gases, resultant from the rupture of copper pipe feeding the gases to the various floors. A good plan is for the Fire Department to have a key which is used to shut off the power in case of a rupture. In Teaneck they have a very rigid ordinance regulating the installation of mechanical refrigerators. In the place of flexible copper pipe, which is apt to be ruptured if a refrigerator is moved in case of fire, it is provided that rigid iron pipe be installed. There was considerable discussion of Chief Murray's address.

The Plan was invited to hold meetings in the following places: February 16, Elmsford; March 16, North Tarrytown; April 20, West Harrison, and October 19, Halsted Manor Fire House, Mamaroneck. Refreshments were served by the local department.

New Haven Chiefs Hear Talk by Helm

With the largest attendance on hand since its organization, the members of the New Haven County Chiefs' Emergency Plan held their monthly meeting on January 18 at Fire Headquarters, Milford, Conn. President John Pachl called upon Chief Lewis F. Stowe of Milford and Fire Commissioners William M. O'Hara, Robert M. Treat and Joseph J. Carroll for speeches of welcome to the visiting officers.

After the business meeting the members listened to a very instructive discussion by Ex-Deputy Chief Henry B. Helm, New York Fire Department. Chief Helm, who served 38 years in the fire service, and for 16 years was in charge of the most hazardous district in lower New York, took for his subject "Fighting Large Fires with Small and Limited Means." During his talk Chief Helm brought out many points that can be used by various Departments, such as the responsibilities of a Chief, how to size up a fire, measures to be taken in the use of and hand lines and deck pipes, how reliable citizens can be used in case of need at fires and a general discussion of fire departmental operations. His talk was thoroughly enjoyed and by unanimous vote of the Plan, he was made an Honorary Life member.

Through the courtesy of the American-LaFrance and Foamite Corporation, a motion picture was projected showing how fires are extinguished by the use of foam.

Through the courtesy of the Underwriters' Laboratories, a sound film entitled, "Approved by the Underwriters," will be shown at the next meeting of the Plan, which will be held at Fire Headquarters, West Haven, on February 15. The guest speaker of the evening will be A. C. Hutson, Assistant Chief Engineer, National Board of Fire Underwriters. Mr. Hutson's subject will be "The Use of Water at Fires."

A committee of five Chiefs was appointed by President Pachl to act upon a resolution presented by the Fairfield County Chiefs' Emergency Plan in regard to future state legislation on fire matters.

Thomas F. Magner

Hurley Day Marked by Chiefs in Boston

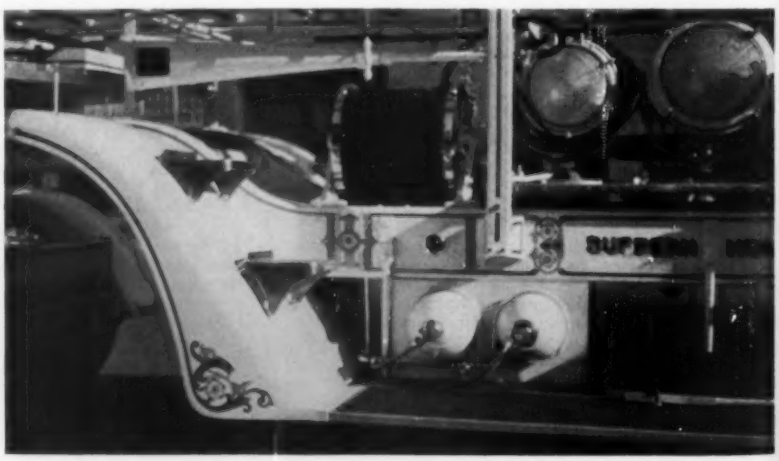
"Hurley Day" was observed by the Fire Chiefs' Club of Massachusetts in the Parker House, Boston, on January 20, when Governor Charles F. Hurley, Judge James M. Hurley, and Chief Patrick J. Hurley, of Holyoke, were the special guests of honor.

Chief William C. Mahoney, of Peabody, presided. Seated at the head table at the luncheon which preceeded the meeting were President Mahoney, Secretary William H. Hill, Belmont, Governor Hurley, Judge Hurley, Chief Hurley, Chief John W. O'Hearn, Watertown, Secretary of the New England Association of Fire Chiefs; Thomas C. Green, Civil Service Commissioner, Fire Commissioner William Arthur Reilly and Chief Samuel J. Pope, Boston; Stephen C. Garrity, State Fire Marshal; M. Norcross Stratton, of the Massachusetts Department of Education, and John J. Martin, of the Boston Janitors' Supply Company.

Addresses were delivered by the Governor, Judge, and Chief Hurley, and by Commissioners Green and Reilly.

Dr. David J. Price, Principal Engineer in charge of the Chemical Engineering Research Division, U.S. Department of Agriculture, will be the speaker at the February meeting of the club.

Harry Belknap



Carbon Dioxide Extinguishers on Fire Apparatus

The Seagrave aerial ladder in service at Suffern, N. Y., carries two 75-gallon Lux cylinders, served by one hundred feet of chemical hose on a reel, and two 20-gallon portable Lux extinguishers. The extinguishing medium is carbon dioxide gas under pressure.

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154 Gals. per Min.
UP TO
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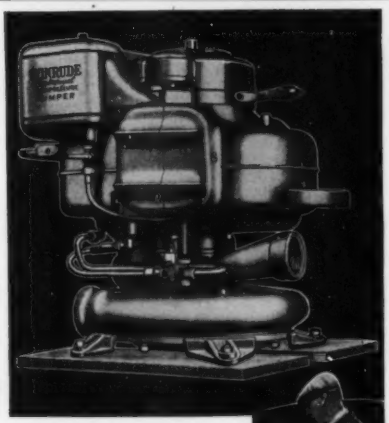
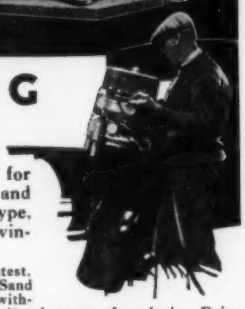
High Capacity with High Pressure



FIRE FIGHTING



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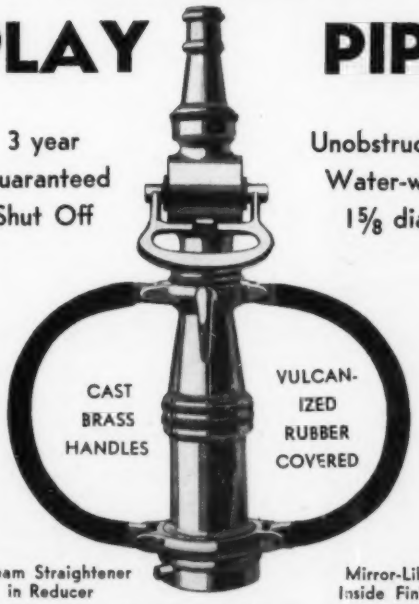

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Frame Dwelling Fires Discussed by Fairfield Chiefs

An address on "Fires in Frame Dwellings," by Arthur F. Bell, Chief Instructor, Firemen's School, Nassau County, N. Y., was the feature of the regular meeting of the Fairfield County Fire Chiefs' Emergency Plan, which took place on the evening of Wednesday, January 26, at Fire Headquarters, Stamford, Conn. The Plan was welcomed by its first President, Chief Victor M. Veit, Stamford, who introduced Mayor E. Gounaud, of the city. In the absence of President Scully, Ex-Chief Peter Beckerle, Danbury, presided.

There was considerable discussion, led by Ex-Chief Beckerle, on the report of Commissioner Merwin, Chairman of the Oil Burner Committee. Chief Beckerle urged members to get ordinances passed by their municipalities regulating the installation and care of oil burners, and the storage of oil. The report of the Legislative Committee was also freely discussed, especially a proposition to employ a man to be on the spot at Hartford and watch legislation in regard to firemanic matters. A motion by Chief Gisborne, Sound Beach Fire Department, to authorize the committee to go ahead with this plan, provided the other counties joined in it and shared the expense, was carried.

Six new members were elected. A motion was carried to present the Litchfield County Plan with a United States Flag.

Several questions submitted through the Question Box were discussed by members.

Chief Bell, in his address, pointed out that, while dwellings vary in size, the same principles with respect to construction may be found in almost all instances. They may be divided into two general types—the balloon and the plate construction. The plate type has this great advantage, that the plates or beams form fire stops for every floor, whereas, in buildings of the balloon type, fire will sweep from the cellar to the attic through the wall spaces. The quickest and best way to determine the type of construction of a frame building is to remove the baseboard at the bottom of the room wall. In most cases, the lath and plaster is not carried down to the floor level, and on removing the base board, it is at once apparent whether the building is of the plate or balloon type.

In the same way it can be readily determined whether a brick building is of solid construction, or brick veneer. This is of the utmost importance in sizing up a fire, as the veneer type is really a frame structure and contains the same hazards as the balloon type. Insulation by rockwool forms a very excellent fire stop. This may also be determined by the removal of the base board, thus avoiding the pulling of plaster walls and ceilings in many cases, and lessening the damage to property.

There are many other interior exposures to consider, such as stairways, hot air and air conditioning ducts, laundry chutes, dumbwaiter shafts, water waste pipe and other openings. Window and door frames also have voids, and these can be exposed with little damage, by removing the window or door trim. Dust accumulated in these spaces in also a hazard. In ventilating the roof, it is better to make one large hole, than several small ones. Care should be taken to determine if there is a ceiling directly under the roof, and if so, this should also be cut or pulled, as otherwise the ventilation will be imperfect.

At the close of his address, Chief Bell was elected an Honorary Member of the Plan.

The evening closed with a moving picture showing the manufacture of rope, presented by L. F. Southwick, of the Plymouth Cordage Company. Refreshments were served by the Stamford department.

Employees Badly Burned When Fire Breaks Out in Match Factory

Seven girls and a man, employees of the Superior Match Company's plant in Chicago, were badly burned when fire swept through the plant. Firemen were hampered by parked automobiles. It is believed that the fire started in the assembly room from a match. A series of explosions followed and soon the entire plant was involved. The plant is located in a night club district.

Ventura Loses Two Officials

The Fire Department of Ventura, Cal., suffers the loss, through death, of Chief H. A. Johnson and M. E. Newby, Treasurer.

Chief Johnson was born in Marshall, Minn., and came to Ventura in 1886 with

The Late Chief Johnson and M. E. Newby

his parents. In 1904 he joined the department and two years later married the daughter of the Chief. He was elected Chief in 1914 and has held that post up to his death. He was fifty-six years old.

He was a past-President of the Rotary Club, a past District Deputy Grand Master of the I.O.O.F., past Exalted Ruler of the Elks, Chairman of the local chapter of the American Red Cross, Secretary of the Fire Chiefs' Division of the League of California Municipalities, member of the I.A.F.C., and several firemen's organizations.

Mr. Newby had been a member of the volunteer department since 1894 and had served as Treasurer since 1914. He is survived by his widow and one son. He died at the age of sixty-six.

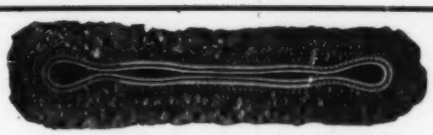
Maine Chiefs Meet

The winter meeting of the State Association, Fire Chiefs of Maine, took place in Gardiner on January 11. Chief Joseph W. Randlette, Richmond, presided.

The speakers included C. W. Lovejoy, Augusta, State Insurance Commissioner; Bernard R. Scully, Maine Underwriters' Bureau; Mayor Edwin P. Ladd, Gardiner; Chief Allen F. Payson, Camden; Deputy Chief Oliver D. Sprague, Gardiner; Chief Frank Lemar, Gardiner; J. F. McGowen, who spoke on "Precautions to Take in the Use of Distillate Burners"; Eugene Rich, President of the Camden Outing Club, and Chief Oliver T. Sanborn, Portland.

A visit was paid to the veterans' hospital in Togus. In the evening a banquet and round table discussion took place in the Johnson House. A field day committee was appointed consisting of Chief Frank Lemar, Chairman; Chief Allen F. Payson, Camden, and Chief Gerald Herrick, of Mechanics Falls. There were 73 persons at the dinner. The next meeting of the association will be held in Bangor in April.

HARRY BELKNAP.



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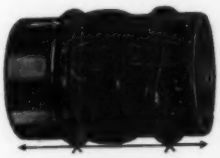

This hose will stand 900 pounds pressure and weighs but 45 pounds to the section uncoupled.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze), with the swivel-protecting feature.

This coupling will stand several expansions and can be used over and over again, saving your city at least 20¢ to 30¢ per foot on future hose purchases.

When in the market, let us show you that we can give you the best service obtainable for the least money.

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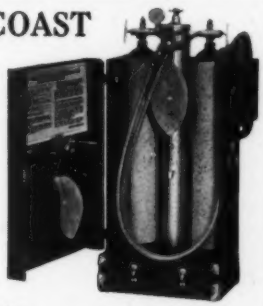

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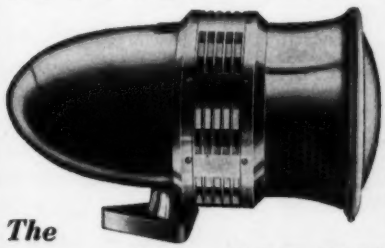

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SMOKE MASK

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Owned by the Sudbury, Ontario, Fire Department, this ALUMINUM ladder is unaffected by extreme temperatures experienced in Sudbury where thermometers register 40 and 50 degrees below zero.

ALUMINUM ladders require no painting or other finishing. . . . They can't rust, splinter or burn and they add materially to the appearance of your equipment.

When ordering new trucks or replacement ladders . . . specify ALUMINUM ladders . . . ***the first cost is the last cost.***

Send for catalog and prices

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. . . and so with fire fighting.

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1 Finer grade cable-twisted yarn providing greater burst-resistance without increased weight or bulk.

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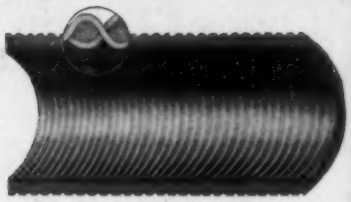

* In the ordinary type of fire hose there is no Smooth-Interior Filler-Ply to fill the valleys in the weave of the inner jacket. As a result, when the hose is subjected to hydraulic pressure, the rubber lining is forced back into these valleys, giving the interior of the hose a corrugated or "washboarded" waterway. The "wash board" condition causes excessive friction loss.

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